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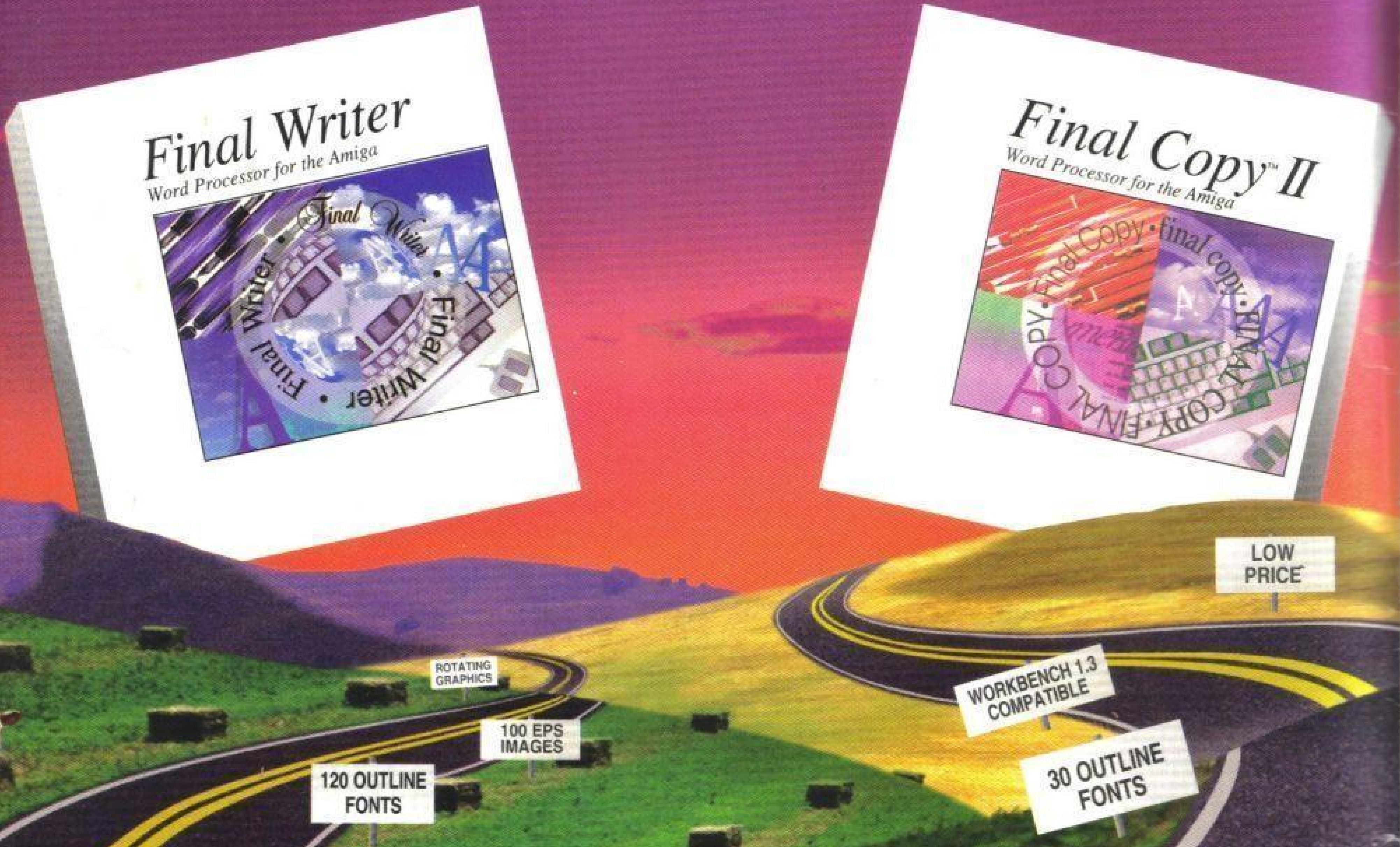
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FIRST *IMPRESSIONS*

Ahab, the White Whale, and the Orphan Fish

Call me Ishmael—or whatever the hell you want. But let's make the first part quick. I'm your new editor and the assignment could've been more pleasant. I've worked on *AW* since '86, and I was around a few computer-magazine blocks before that, too.

HUNTING THE WHALE . . . OFF THE BAHAMAS?

Okay, let's get to it. We've got vermin in the boot blocks here in the Amiga community, and you can spell the name of the virus as "Commodore." As most of you know already, Captain Gould has abandoned ship—or at least part of the ship. (His strategy for defeating the great White Whale of debt he's in remains inscrutable right now.)

So, what this modern-day Captain Ahab and his top ship's officers are up to at the moment was unknown at this writing, but he did make most of his engineering staff (the only ones who ever really gave a damn about the Amiga) walk the plank just before heading to the lifeboat himself.

Up to this point, the story has been reported in several different ways. (The facts as we know them are given in the box in "Overscan," p. 4.)

I don't know the exact terms of the liquidation settlement as I write this. The implications, however, may not require a whole lot of speculation. What readers are most concerned about is, Will my system become an orphan with nobody developing products for it? From everything we've been able to gather from talking with many Amiga developers, the answer is a resounding NO!

YOU CAN'T STEAL WHAT YOU DON'T *REALLY* OWN

If all or parts of Commodore's operations go into liquidation, it is extremely likely either that someone else can then acquire the company, or that the Amiga technology will be licensed to interested third parties. Either way, there will still be Amigas being sold out there, and people developing new products for them. And, believe me, no one is more interested in continuing the Amiga line than the development community.

As one developer said to us, "This is the best thing that's happened to the Amiga, because—guess what—somebody's going to pick up the technology and run with it."

And Mike Levin, a leading spokesperson for the Commodore Shareholders' Movement (the good guys who've been trying to rock the yacht for a couple of years now), says there's a lot of interest from true-blue, hardcore developers. Here's part of what Mike had to say to us: "Whoever gets the Amiga technology, we must all call for them to license it to other interested parties for manufacture. Imagine a custom Amiga from NewTek, Scala, GVP, Digital Creations, RGB, and Utilities Unlimited. Amiga developers could finally own their own destinies. From Commodore's ashes, a new and vital alternative computer market could rise."

And hat's off to Blue Ribbon SoundWorks, which fired off a letter to its entire customer base to tell them, categorically, the company intends to support them no matter what happens to Commodore. In addition, Blue Ribbon president Melissa Jordan Grey said: "[Events at Commodore] do not in any way diminish the outstanding technology which has evolved since the Amiga's inception. In fact, Commodore's demise may actually spur additional growth of the Amiga . . . "

And that's only a brief sampling of the dozens of things we've heard from developers—not to mention the hundreds of supportive calls we received from readers.

So, we'll keep you informed about what goes down at Commodore subsequently—but, more importantly, don't worry if they stick a good, long fork in that White Whale. The King is dead, Long live the King (that's us, mate)! ■

Daniel Sullivan

Editor-in-Chief

AmigaWorld

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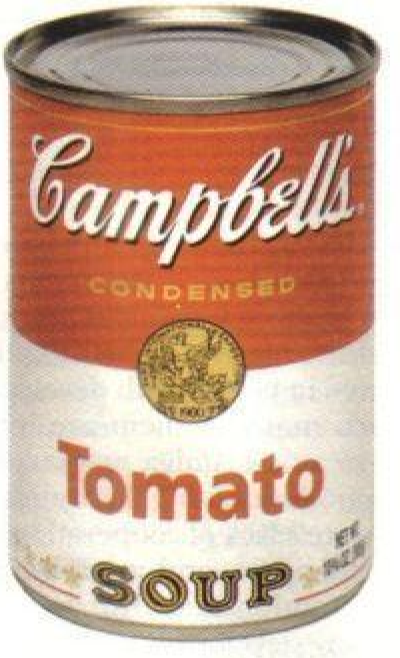
COVER PHOTOGRAPH BY EDWARD JUDICE



*They say he liked his tomato soup **exactly** the way Campbell's intended it (who's behind door upper-left on the cover?), but we know surviving Amiga artists and graphics buffs like to play fast and loose with almost everything. Find out which of the three "great manipulators" provides the flavors you prefer—p. 19.*

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OVERSCAN

News, New Products and Networks

VENDORS PLEDGE SUPPORT FOR AMIGA . . . WITH OR WITHOUT COMMODORE

In the aftermath of the recent announcement by Commodore to liquidate at least part of its operations (see box, right), developers and distributors of Amiga products rallied to affirm their support for the Amiga market.

Major distributors, including Creative Computers, Micro-Pace, and Creative Equipment, all confirmed they are ready, willing, and able to supply Amiga users with Amiga products. Also, via an unofficial polling of third-party producers of hardware and software, *AmigaWorld* found widespread commitment to continued development of Amiga products.

All parties seemed buoyed by the likely prospect that the resolution of liquidation proceedings would, at the very least, result in the licensing of Amiga technology to interested third parties—of which, so we were told, it appears there are many.

In the days immediately following the Commodore announcement, several companies issued public statements affirming their intentions to stay in the market and to continue support to users. Blue Ribbon SoundWorks, for example, told its customers, "We remain 100% committed to our world-wide Amiga customer base and fully intend to support you with additional Amiga software and hardware offerings." Other such statements were expected as we were going to press.

One of the more enlightening things *AW* learned in talking with developers is how much many of them are looking forward to a new Amiga market—without Commodore. Citing frustration with Commodore's lack of cooperation, poor customer support, and woefully inadequate promotion and distribution efforts—many developers were really animated about future prospects. Phrases like "controlling our own destinies," "a better market arising out of Commodore's ashes," and "saving the technology" seemed to echo like a refrain throughout almost all the conversations.

A more down-to-earth—but perhaps even more refreshing—comment came from Mike Halvorsen of Impulse, the developer of Imagine. When asked about the significance of Commodore's departure, the ever-forthright Halvorsen said, "Who gives a #*!#*? They've been dead for 10 years!" Exaggeration aside, that might just be the point: The Amiga community—Amiga users, developers, vendors, publications—is, and always has been, us!

—DS

1200CD UNVEILED AT ETCS

LONDON—Despite the parent company's financial problems, Commodore UK and the Amiga CD32 made a strong appearance at April's European Computer Trade Show (ETCS).

The big news was the unveiling of a working prototype of a CD32-compatible CD-ROM drive for the A1200—the **1200CD**. It is a top-loading, double-speed drive—an off-white, square version of the CD32—that allows the A1200 to run CD32 software and play audio CDs. The unit on display—which appeared to be running fine—had an independent power source, and was connected to the right side of the rear of the A1200 via a cable. (It wasn't clear how the final product would hook into the A1200.)

However, owing to design differences between the A1200 and CD32, the 1200CD does not support MPEG to play video CDs. Yet, a Commodore rep indicated privately ►

COMMODORE LIQUIDATION PLANS REMAIN UNCLEAR

As of this writing, the facts we know about Commodore's liquidation plans are as follows: On April 29, the company issued a statement that in the days following was subject to a wide range of (conflicting) interpretation—from total liquidation of Commodore's entire worldwide operations to various scenarios of partial liquidation.

What's really going on? From what we can piece together from all our sources, Commodore International, the parent company, placed Commodore Electronics Ltd., its major subsidiary, into voluntary liquidation. Company assets are being transferred to trustees who will administer them "for the benefit of Commodore's creditors."

Many of Commodore's regional operations remain open—led by Canada, Germany, Italy, Scandinavia, and the UK, all of which reported "business as usual." As of this writing, there was no clear indication that Commodore International had entered into liquidation—only the subsidiary, Commodore Electronics. Both companies are incorporated in the Bahamas. The Bahamian Supreme Court was to appoint the trustees who will preside over the liquidation.

There are two likely outcomes: Someone may acquire the entire Commodore International operation; or, the trustees may arrange for interested third parties to purchase licensing agreements—perhaps on a nonexclusive basis—to the Amiga technology. In either case, Amiga systems and products should continue to be produced.

—DS ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 78.

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Best Amiga Tips and Secrets
BERMUDA

Denny on DOS

HINTS & TIPS FOR MASTERING THE OPERATING SYSTEM

By Denny Atkin

#2—Speech! Speech!

The Amiga was the first personal computer to boast an out-of-the-box ability to talk back to its owner. Its speech synthesizer, called the Narrator or Translator (after the device drivers that make it work), has been used primarily in children's educational programs to provide narration or to read answers aloud. (One wonders if there's a generation of kids out there with traces of a bizarre, slightly mechanical accent.) Some productivity programs, such as ProWrite, have added Narrator support, allowing you to hear your documents read aloud. There are, however, other ways to put your "talking" Amiga to good use.

The speech-synthesis system was updated with AmigaDOS 2.04, providing much clearer speech. (Unfortunately, Commodore didn't renew its license to use the speech programs, and thus versions 2.1 and later of AmigaDOS don't include the speech commands—but check out the "Quick Tip" to see how to give a mute Amiga its voice back.) So, let's look at how to take advantage of your Amiga's speech capabilities.

SAY YOU, SAY ME

The Say and Echo commands are similar, except that the former speaks the text following it while the latter prints it to the Shell window. Using Say in its simplest form, you would type SAY followed by the text you want said in quotes, as in SAY "Hello, World!"

If you type SAY without entering any text and then hit Return, a window will open into which you can type sentences to be read aloud. However, typing to live accompaniment isn't useful for much except showing off. Say can become truly useful, though, when used in AmigaDOS scripts.

For example, have you ever been cooking dinner and decided to sit down at your computer to do a "little" work, only to realize suddenly that an hour has passed and the pizza in the oven now resembles a large, black frisbee? Type ED S:TIMER and type the following lines into the editor:

```
.key TIME
WAIT <time> MIN
SAY "Attention, Amiga user!"
SAY <time>
SAY "minutes have passed."
```

Save the file by pressing Esc, X, and Return, and type PROTECT S:TIMER +S to make the script executable. Now you can type RUN TIMER 10 and your Amiga will alert you when ten minutes have passed with a vocal warning. For an alarm of shorter duration, change MIN to SEC in the second line of the script, and type in the number of seconds you want the script to wait. Alternatively, you could change the second line to WAIT UNTIL <time> and then input a specific time for your alarm in HH:MM format.

Say is also handy for tracking the progress of a script running in the background. For instance, suppose you were running a script that contained slow Shell commands to convert pictures from one format to another. You can include Say commands after each conversion command to keep you abreast of the script's progress. You could also use the Echo command to do this, but that's useful only if you can see the Shell window; the Say command is effective no matter what screen is at the front.

There are a number of options you can include on the Say command line to modify the voice. These include -m to specify a male voice, -f for a female voice, -r for a robotic voice, and -n for a natural voice. The -s command, followed by a number between 40 and 400, controls the speed of the Amiga's speech, while -p followed by a value of 65 to 320 modifies the voice's pitch. For example, to have the Amiga speak in a fast-paced, low, robotic voice, you would type SAY "DANGER, WILL ROBINSON!" -R -P 65 -S 220.

QUICK TIP

If you have upgraded your Amiga to AmigaDOS 2.1 or later, the install script leaves the old speech files in place. But if you bought a newer Amiga with no speech synthesis, you need to copy the following files from a Workbench 1.3 or 2.04 disk to your boot disk:

```
l/speak-handler
libs/translator.library
devs/narrator.device
utilities/say
```

Also, you must paste the entry for the SPEAK: device into your DEVS:MOUNTLIST file, unless you plan to use only the Say command.

SPEAK: YOUR MIND

AmigaDOS 1.3 and later adds a new logical device called SPEAK:. This device will output all data sent to it to the Amiga's speech synthesizer. By directing output to this device instead of to a file or the Shell, you can have your Amiga speak almost anything. For instance, if you type DIR >SPEAK: RAM:, the Amiga will read the names of all the files in the RAM disk. You can also make your Amiga read text files aloud, again by sending the output to the SPEAK: device; for instance, you might use TYPE >SPEAK: README.TXT to have the Narrator read a documentation file aloud to you. Another advantage of SPEAK: is that it can also add speech to most programs that can save files as plain ascii text; simply type SPEAK: in the text gadget where you'd normally specify a disk-drive name.

Before using SPEAK: you'll need to activate it by typing MOUNT SPEAK:. Using the OPT keyword, you can include the voice-modification options supported by the Say command to modify the tone of the text being spoken. To have a file spoken in a robotic voice at a moderate speed, send the output to SPEAK:OPT/r/s160. ■

*Denny Atkin is an editor at **OMNI** Magazine and author of **Denny Atkin's Best Amiga Tips and Secrets**. Send comments and suggestions via e-mail to DennyAmiga@aol.com.*

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AGA STORM WATCH

A "storm" is brewing in the accelerator department at *Advanced Systems and Software* (RS# 121) with the new Blizzard and Cyberstorm series of boards for AGA Amigas.

The **Blizzard 1230-II Turbo** is for power-hungry Amiga 1200 owners and the **Blizzard 4030 Turbo** for the Amiga 4000/030.

The Blizzard 1230 is available in two configurations: a 40 MHz 68EC030 model without a Memory Management Unit, and a 50 MHz 68030 with an MMU. Two sockets on the board allow for the addition of 50 MHz or slower floating-point (FPU) math chips (either PLCC or PGA). The board includes a battery-backed clock and SCSI-2 support.

The 50 MHz Blizzard 4030 Turbo promises to double the speed of your A4000. Look closely at the board and you'll find a PGA socket for an optional 68882-50 FPU, which can dramatically boost such memory-intensive projects as rendering.

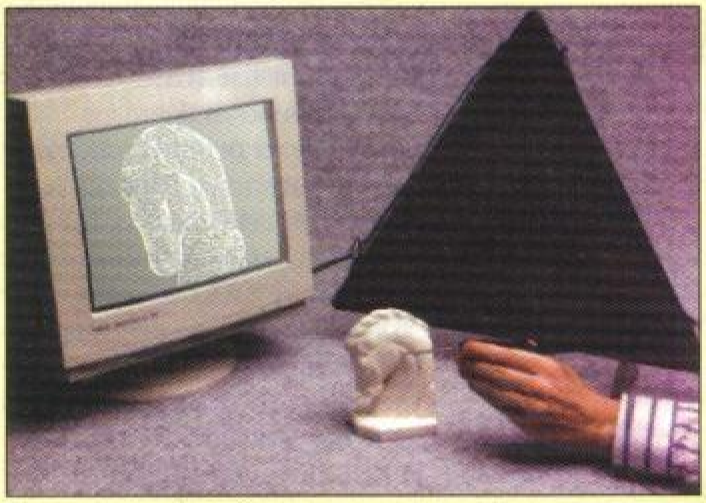
The **Cyberstorm** for the A4000 consists of an '040 or '060 CPU module and memory board, which install onto the Cyberstorm carrier board. It is available in three versions: either 25 or 40 MHz for the '040 model (from $695), or 50 MHz for the '060 ($1995). You can add up to 128MB of fast RAM to the memory board via 32-bit SIMMs.

The optional **Communication Module** attaches to the carrier board to provide a fast SCSI-2 interface, an Ethernet controller, and high-speed serial ports.

The **Cyberstorm Cache Module** connects to the CPU module to provide a second-level cache.

ORGANIC INPUT

With the **VertiSketch** ***(Blevins Enterprises)*** 3-D digitizing system, LightWave users can create accurate reproductions of physical objects for their animations. It works directly with LightWave Modeler, so no detail or data is lost owing to importing and exporting between different modeling software. The VertiSketch software ($995, alone) features powerful utility commands that allow you to control the placement of sampled data and to edit existing polygons and points. The software is compatible with digitizing hardware from Science Accessories, Faro Technologies, Polhemus, and others. Complete systems start at $2395. You'll need an A2000, A3000, or A4000 with Toaster 3.0 and DOS 2.04 or later. (RS#122).



VertiSketch creates "organic" models.

PARADISE COVE
PARADISE COVE

Alpha Paint—the first fully-integrated 36-bit program for the Video Toaster.

36-BIT PAINT FOR TOASTER

If you like to "paint-by-numbers," how does 36 (bit) grab you? That's just what **Alpha Paint** ($699.95, ***InnoVision***) for the Video Toaster promises. It combines 24-bit painting and image enhancing with a 12-bit alpha channel for antialiasing, blending, and compositing. The alpha channel paints directly into the Toaster's hardware mixing channel. Better yet, Alpha Paint doesn't require any additional chip RAM, programs, or hardware to operate—it paints directly on the Toaster's display! (RS# 123).

OVERHEARD

Noahji is now the exclusive US distributor of MacroSystem's line of products, including the Toccata, Retina, and VLab. Software updates, technical support, and repair service will also be handled by Noahji (3591 Nyland, Lafayette, CO 80026; phone 303/499-1975).

From p. 4.

that the module could be accommodated via other means, but wouldn't elaborate. David Pleasance of Commodore UK stated that there will also be a CD32-compatible CD-ROM for the A4000, which *will* support MPEG. The drive could be available in Europe as early as September or October.

Spotlight on CD32

The CD32 was another bright light at the show. Commodore indicated that as of April 10, just six months after the machine's release, the CD32 had assumed a dominant position in the UK's CD-ROM market, accounting for 46.2 percent of all CD games sold. In addition, CD32 titles occupied 13 of the 20 slots in the UK Chart Talk roster of CD best-sellers.

At the time of the show, 80 titles had been released for the CD32 and more than 200 are in development—a figure Commodore indicated should increase significantly after it met with prospective developers attending the show.

Many of the early releases have been more-or-less straight ports from the Amiga disk versions, but in coming months we should see an increasing number of CD32-first or CD32-only releases, including the action/puzzle game **Litil Divil**, the ray-traced robotic beat-'em-up **Rise of the Robots**, the graphic adventure **Lost Eden** (formerly Saurus), and the three-CD extravaganza **CyberWar** (a followup to The Lawnmower Man).

This is not to say there was any shortage of disk-based software for the Amiga. Among those were ***Virgin's*** upcoming conversions of the Aladdin videogame for Genesis and Crash Test Dummies; ***Renegade's*** LucasArts-like **Flight of the Amazon Queen, Ruff 'N' Tumble** and **Elfmania**; ***Millenium's*** **Pinkie**; and a whole raft of games from ***Team 17***—everything from a bowling game to **Alien Breed II: Tower Assault** to a yet unnamed 3-D game.

Sealed With an ACE

Commodore also announced the establishment of a Commodore Seal of Approval—a stamp of quality available to peripheral and software manfucaturers after their products undergo rigorous testing. Scanners, disk drives, and RAM cards are expected to be among the first tested.

The company came to the show with an ACE up its sleeve: a second Amiga Centre of Excellence, this one located in central London. The two ACEs—the first opened in Wales in March—are intended to provide one-stop service for professional Amiga users looking for high-end multimedia help.

—Peter Olafson

Prime-Time PD

ONLINE SOURCES FOR FREELY DISTRIBUTABLE SOFTWARE

By Tim Walsh

Found: rumor, debate, files, and info

No discussion of recent online happenings would be complete without some mention of the fascinating financial soap opera that's unfolded on the nets over the past few weeks. After Commodore released its most recent quarterly earnings in early April, the messages areas were ablaze.

Since not all *AmigaWorld* readers have access to the nets, I decided to share some notes I found in these online venues. The inaccuracy of these judgement calls was exemplified by a well-intentioned member of the Amiga User area on CompuServe. This individual gave a rather convincing report of the woes brought on by Commodore's debts, only to conclude with a note that Sage Technologies recently completed the acquisition of CBM, Inc. That was true—except the CBM in question was not Commodore Business Machines!

A member of the Amiga Roundtable on GEnie suggested that the Commodore Shareholders Movement form a support group. Another GEnie user criticized *AmigaWorld* for not commenting on the happenings, as if commentary from *AmigaWorld* might settle Commodore's financial affairs. (*AW* does, however, address the Commodore situation in this issue—see pp. 2, 4.)

Another individual on CompuServe recommended: Buy an A4000 and don't fret about the decision. His reasoning was that any computer other than a new-generation Power Mac or Pentium machine will grow obsolete before the A4000 does. Not surprisingly, no one argued with his logic.

LOOKING AT FILES

Enough Commodore commentary—onto the online files. Maybe it's because I'm always filing computer files away into obscurity that I really like programs that help me find misplaced ones. A utility that rapidly scans your Amiga's devices for files or directories, *FindIt 1.12* by Enola Productions, was designed apparently for folks like me. It relies on Stephan Stuntz's ever-popular MUI to create a user-friendly interface and graphic depictions of volumes and directories.

After launching FindIt, a list builds as files matching your search criteria are displayed. FindIt also searches using dates. These are entered in day-month-year format, or as "today," or "yesterday." Finally, FindIt lets you search by file size.

If you don't need a highly sophisticated file-searching utility, check out *VFind* by Vicky Staubly. A $6 shareware file finder, VFind consists of three buttons, a status area, and a results list, all of which reside on the Workbench. Select the device and directory where you want to begin searching and the results window lists all the matching files. If the list is lengthy, a scroll bar lets you peruse the list.

SYSINFO UPGRADED

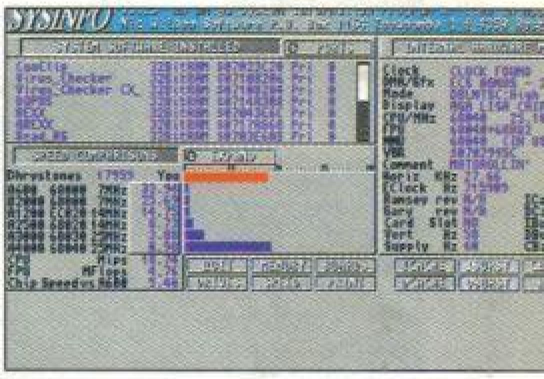
Just as I was putting the finishing touches on this column, another update (*3.23*) of *SysInfo* by Nic Wilson appeared. A $20 shareware program, Sysinfo accurately interrogates hardware, software, modes, and the speed of your Amiga.

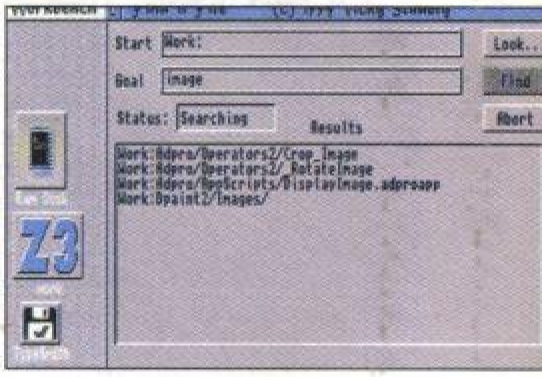
Thanks to a unique GUI interface, mouse clicks instantly reveal information you've been craving to see in the areas of memory, boards, drives, and libraries. Click the Library option and it toggles through the device drivers, resources, ports, and tasks. SysInfo also reveals the operating speed of all devices, such as floppies and hard drives. Another click or two calls up more information on any boards, their memory addresses, configuration, size, and so on.

SysInfo also measures your Amiga's speed in MIPS and also MFLOPS (if your machine is equipped with an FPU). The program also provides a chart that graphically compares your system against six Amigas—ranging from an A600 to an A4000/040. More clicks toggle among Cache, Burst, and Copyback modes to see the difference that each setting offers.

In a flash, you'll discover which version of the Agnus chip is inside your computer and whether it's 512K, 1MB, or 2MB in size. The Horiz KHz option shows the horizontal scan frequency of the current display, while EClock Hz shows the frequency of the EClock, used for checking CIA chips.

With a couple of updated file finders, and a new version of SysInfo, I feel ready to take on the world . . . Now, in which directory did I bury the document outlining my plans to do that? ■





Start Work:
Goal image
Status: Searching
Results
Work:Adpro/Operators2/Crop_Image
Work:Adpro/Operators2/_RotateImage
Work:Adpro/AppScripts/DisplayImage.adproapp
Work:Dpaint2/Images/

SysInfo 3.23 gives you the "inside scoop" (top). VFind uses a window on the Workbench to locate errant files (bottom).

Network Voice Numbers

BIX
800/695-4882
617/354-4137

CompuServe
614/457-0802
800/848-8199

Delphi
800/695-4005

GEnie
800/638-9636

Portal
408/973-9111 ■

Write to "Prime-Time PD" c/o ***AmigaWorld*** *Editorial, 80 Elm St., Peterborough, NH 03458; or contact Tim through the Internet at twalsh@bix.com.*

External time-base corrector.

TBCPlus

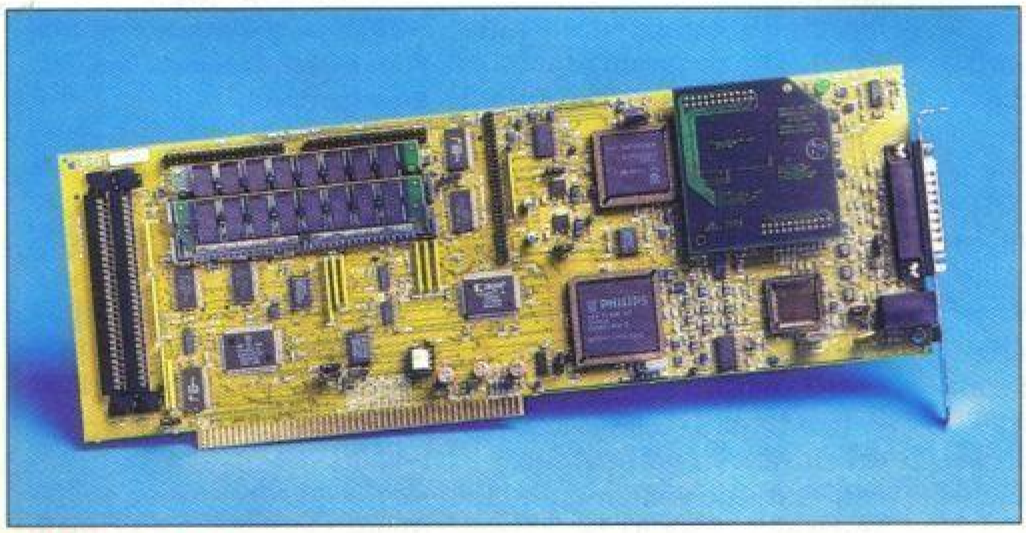
Great Valley Products, $949; frame RAM SIMM $249; Digital Comb Filter $99.
Amiga 2000, 3000, 4000.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Installation: **Easy.**
Minimum system: **AmigaDOS 2.04 or later, 2MB, hard drive.**
Recommended system: **4MB, AGA Amiga, hard drive.**

Looking for a new, carefully engineered, infinite-window time-base corrector? If so, be assured that TBCPlus goes far beyond the typical product by offering myriad video options with significant signal processing and control. There's cross-standard conversion, transcoding of Y/C and composite signals, and multiple inputs and outputs for all manner of video signals.

Another thing distinguishing TBCPlus from other TBC cards is the fact that it is designed specifically for the Amiga, and it thus requires a Zorro II or III slot instead of the usual PC slot. Software control, too, is handled via the Zorro bus—instead of the serial port.

PRO-SUMER PRODUCT

TBCPlus includes 1MB of framebuffer RAM and an empty SIMM socket for an additional 1MB. There are sockets for 2 or 8MB of optional system fast RAM, plus a Digital Features Bus and Video Expansion Bus. You can also add optional Digital Comb Filter and SMPTE/EBU time-code modules. My review unit came equipped with 2MB of framebuffer RAM and the Digital Comb Filter.



TBCPlus installs easily into any vacant Zorro II or III slot.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 78.

The rear of the card contains a DB-25 connector, with a 14-inch "ponytail" of cables ending in RCA, BNC and 4-pin mini-DIN (S-VHS) Y/C connectors for video and time-code signal I/O. Each cable is labeled for easy identification. An RJ66-style jack provides the connection for an optional I^{2}C external serial-control box.

Multiple video support gives TBCPlus a true international flavor. It accepts input from SECAM, PAL-B/G, PAL-H, PAL-I, PAL-N, PAL-M, NTSC-M, and NTSC-4.43. Output signals include NTSC-M, NTSC-4.43, PAL-B/G, PAL-N, and PAL-M. GVP advises in the manual that while the quality of conversion is "suitable for all forms of 'pro-sumer' video and business teleconferencing applications," it may not be possible to achieve "complete broadcast-quality conversion."

The transcoding is independent of the standards conversion, so you can input Y/C NTSC and output PAL composite if you so desire. You can connect two composite inputs and one Y/C in, or use the composite inputs as a second Y/C input. With its Y/C and composite transcoding and simultaneous Y/C and composite output capability, this unit has covered all the bases.

SIGNAL AHEAD

The onboard processing amplifier is fully software controlled. The roster of controls and calibrations that the software provides reads like a broadcast engineer's wish list. You have command over aperture frequency and filtering factors, band pass and coring filter, and cross-color reduction and other cross-standard compensations. Furthermore, TBCPlus gives you videotape-noise reduction and flutter-line exclusion; gain controls for chroma, ACC, blackburst A/D, CVBS-Y/C, AGC, CVBS/Y,

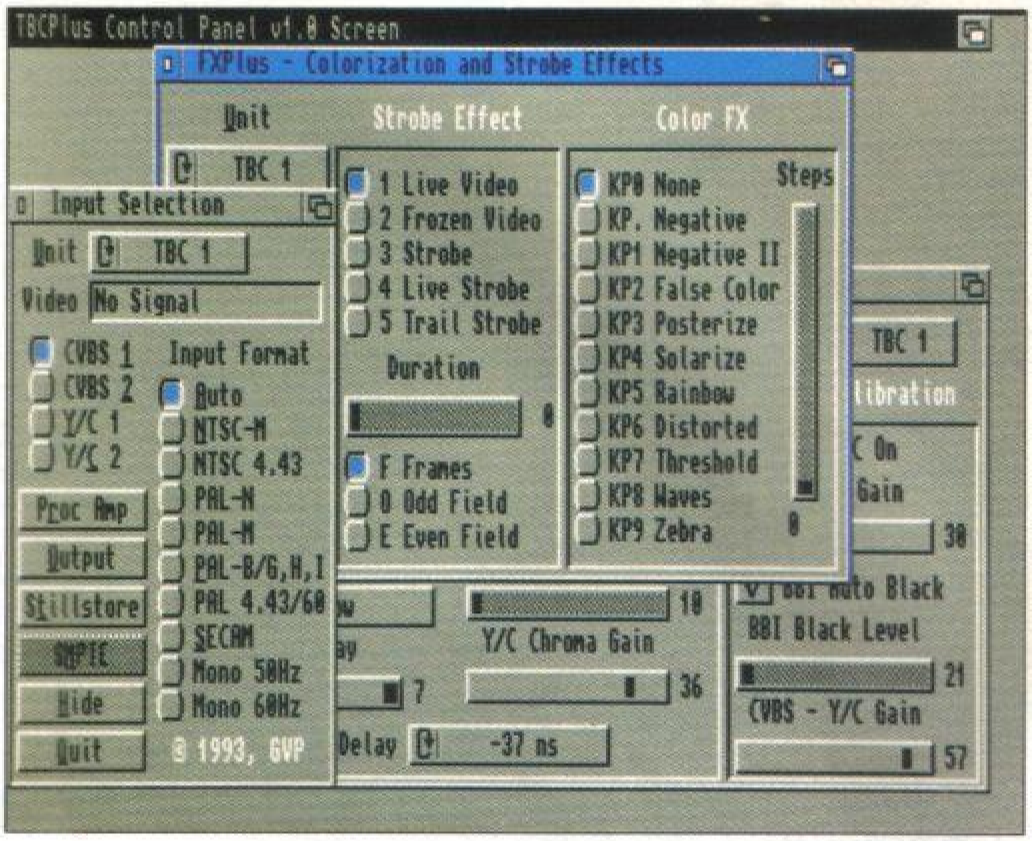
W S

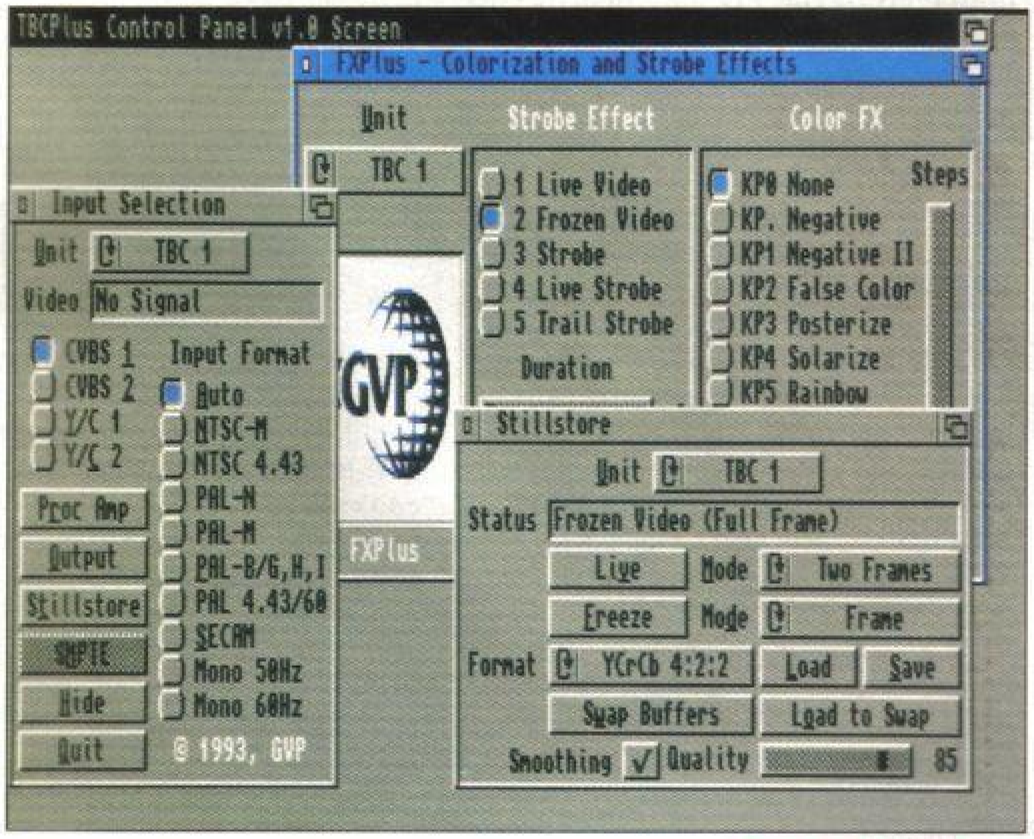
and CVBS/Y A/D; chroma and luma delay; and the usual brightness and contrast settings—to name just a few of its many features. The software allows both global and individual control of multiple TBC cards. For hobbyist-level users, the presets and automatic controls suffice to control the signal.

As mentioned above, it is SMPTE/EBU time-code capable, with complete control over the selection of external or internally generated VITC or LTC timecode source. It also provides support for NTSC/29.97, PAL/25, Film/24, and B&W/30 timecode standards, plus an NTSC drop-frame option; there's also a Burn-in Window option for the output.

Framebuffer RAM is available for framegrabbing, providing complete control over freezing odd or even fields or whole frames of video, which you can then save to disk in a variety of formats, including 4:2:2 digital, Caligari .6rn, IFF-24, and JPEG. Any of these formats load into TBCPlus, turning it into a 24-bit framebuffer. These images are displayed at the TBC's video output, not on the computer's RGB monitor. By adding the optional second megabyte of framebuffer RAM, you can load two images and switch between them by swapping buffers.

Strobing and ten preset colorization special effects are accessed through an FXPlus menu. These effects are very much like some produced by the Video Toaster's ChromaFX slice. Among them are Negative, Solarize (ChromaFX Crazy Nuke), Rainbow (ChromaFX Solarize), Zebra (ChromaFX Chrome), and Posterize. While you cannot customize the FXPlus effects, such as ChromaFX, these effects offer two advantages. When you "freeze" the video with TBCPlus while the effects are activated, the video you grab includes the effect (by contrast, the Toaster cannot grab its own ChromaFX effects). Also, the TBCPlus effects work on grabbed frames or images loaded into TBCPlus (whereas the Toaster's ChromaFX works only on incoming video. With TBCPlus, you can even strobe while using the effects).


TBCPlus Control Panel v1.0 Screen
FXPlus - Colorization and Strobe Effects
Unit
Strobe Effect
Color FX
TBC 1
1 Live Video
2 Frozen Video
3 Strobe
4 Live Strobe
5 Trail Strobe
Duration
0
F Frames
O Odd Field
E Even Field
KP0 None
KP. Negative
KP1 Negative II
KP2 False Color
KP3 Posterize
KP4 Solarize
KP5 Rainbow
KP6 Distorted
KP7 Threshold
KP8 Waves
KP9 Zebra
Steps
0
Input Selection
Unit TBC 1
Video No Signal
CVBS 1
CVBS 2
Y/C 1
Y/C 2
Input Format
Auto
NTSC-M
NTSC 4.43
PAL-N
PAL-M
PAL-B/G,H,I
PAL 4.43/60
SECAM
Mono 50Hz
Mono 60Hz
Proc Amp
Output
Stillstore
SMPTE
Hide
Quit
© 1993, GVP
10
7
Y/C Chroma Gain
36
Delay -37 ns
TBC 1
libration
C On
Gain
30
BBI Auto Black
BBI Black Level
21
CVBS - Y/C Gain
57


TBCPlus Control Panel v1.0 Screen
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KP5 Rainbow
Steps
Input Selection
Unit TBC 1
Video No Signal
CVBS 1
CVBS 2
Y/C 1
Y/C 2
Input Format
Auto
NTSC-M
NTSC 4.43
PAL-N
PAL-M
PAL-B/G,H,I
PAL 4.43/60
SECAM
Mono 50Hz
Mono 60Hz
Proc Amp
Output
Stillstore
SMPTE
Hide
Quit
© 1993, GVP
GVP
FXPlus
Stillstore
Unit TBC 1
Status Frozen Video (Full Frame)
Live
Mode Two Frames
Freeze
Mode Frame
Format YCrCb 4:2:2
Load
Save
Swap Buffers
Load to Swap
Smoothing ✓ Quality
85

You can access devices and modes via the control panel on TBCPlus.

Good Reading

The software interface resides on its own custom screen, a public screen, or the Workbench screen. It can also open in a "hidden" condition without a window and be operated completely via the keyboard or ARexx. Options accessible through ARexx include the proc amp, freeze-frame control, time code, special effects, buffer controls, signal calibration, and input and output selection.

In the manual, discussion of each menu item is accompanied by details on its ARexx command usage, values, results, and examples. This eliminates the flipping back and forth that is necessary with the usual separate ARexx section. I was impressed with the thorough and well-organized manual—one of the best I've seen for any Amiga product.

The TBCPlus software also provides a Render and Scanner module for use with GVP's ImageFX software. You can render from ImageFX to the TBCPlus framebuffer RAM, using it as a handy composite 24-bit display board. ARexx-compatible software, such as ADPro, could do the same through an ARexx script. This method, however, involves the roundabout method of saving the image to RAM, and then loading from RAM into TBCPlus.

Toaster Tips

I do have a few small complaints. The LED that ►

http://www.oldgamesitalia.net/ http://www.oldgamesitalia.net/

indicates valid video output from the board is visible only when the Amiga's cover is removed, so keep a screwdriver handy. Also, TBCPlus is not particularly Toaster-friendly, as there's no button on the Toaster's Switcher screen to give instant access to the TBCPlus screen. The Ctrl/Ctrl Alt/Alt keypress route is a necessity.

I also discovered that when I set the TBCPlus to any strobe mode and then returned to the Toaster to use any Switcher effect, the strobe effect halted during the switch. The strobing video would either freeze during the switch duration, or it would cease strobing and appear as normal video. Once the switch effect was complete, it would return to its strobing. Obviously, the TBC requires CPU time to produce strobing, instead of its being controlled completely by the TBCPlus board. This limits the usefulness of the strobing abilities in conjunction with the Video Toaster. The only Toaster switch that did not affect the strobing was a simple "take."

Minor shortcomings notwithstanding, the interface, ARexx compatibility, and software flexibility of TBCPlus make for easy integration into any sort of application, from video production to various forms of multimedia work. If you are considering buying a TBC for your Amiga, you will find your time well spent with a good, long look at the TBCPlus.

—Fred Hurteau

AMIGALINK

Spectronics International USA,
$259.95 for two nodes;
additional nodes $124.95 per machine

All Amigas, CDTV (CD32 with an add-on that provides a floppy port).
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Installation:* Easy.**
***Minimum system:* Two Amigas running AmigaDOS 1.3.**
***Recommended System:* Multiple Amigas running AmigaDOS 2.04 or later.**

Flexible networking system.

Networking Amigas isn't easy, because they suffer from a lack of standardization with their respective expansion ports. You can get Arcnet and Ethernet cards that plug into Zorro slots, but that's useless if one of the machines you need to network doesn't have slots. Custom solutions for the A500 and A1200 are available, but they're pricey.

The freely distributable ParNet networking system is an inexpensive solution, but you must disconnect it every time you need to use your parallel port for something else, and it supports only two machines. Enter AmigaLink, a solution that works with all Amiga models, as well as CDTV. This simple but reliable networking package achieves its universal compatibility by plugging into the Amiga's floppy-drive port.

GATHER 'ROUND

AmigaLink comprises a disk with the necessary software, a concise but complete 35-page manual, a cable, and two floppy-port expansion connectors. The package supports up to 20 Amigas, using a maximum of 330 feet of cabling.

Setting it up is easy: Just attach an expansion connector to the floppy port on the back of each of your Amigas, or to the pass-through on the back of an external floppy drive; then install coaxial cable between each of the network connectors. (If your external floppy drive doesn't have a pass-through port, you'll have to disconnect it or purchase a Y-adapter from Spectronics.) The coaxial connectors are T-style, with terminator plugs covering the unused connectors at the ends of the network.

Software installation is even easier—everything is automatically copied using Commodore's Installer application. It's a far cry from setting up complicated PC networks.

Since AmigaLink is a peer-to-peer network, no single computer acts as a file-server for all the others on the network. Rather, you choose which devices on each computer are available; then any computer on the network can access those devices. Once you have installed the device drivers, load the Export program on each computer and select which drives you want to make available on the network. To determine which drives should be available on your workstation, you use the Import program, selecting each computer from which you want to import drives. (You assign a unique name to each computer.) The Import and Export programs are nicely done, with standard AmigaDOS 2 graphical interfaces. (The functions are available on AmigaDOS 1.3 systems such as CDTV, but you'll have to use the Shell to set them up.) The network driver follows Commodore's SANA II networking standard, so you can use other networking software such as Envoy (Intangible Assets Manufacturing), which offers AmigaLink users such advanced features as file security, user accounts, and the ability to make individual directories available to network users. (Intangible Assets is planning to offer an Amiga-Link/Envoy bundle.)

Imported drives work just like local drives: They appear as icons on the Workbench screen, and you can access them from the Shell and application file requesters just as if the drive were directly connected to the computer. The only difference is speed—which is AmigaLink's only drawback. Because it uses the floppy ports, it's limited to speeds similar to those of floppy disks.

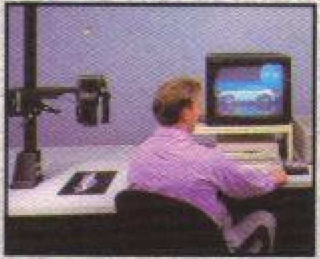
DiskSpeed benchmark tests with loading some large applications showed actual speeds ranging from 25K per second to a high of about 50K per second when using a large buffer. Whether this is a problem depends on how you plan to use the network. If you choose to keep all your applications on one computer, you'll really notice AmigaLink's slowness; major applications may take 20 to 30 seconds to load. On the other hand, the speed isn't that noticeable when working with data files under 100K.

DEPEND ON IT

I found AmigaLink to be very reliable in operation. I set up a three-machine system with an A1200, an A4000, and a CDTV, and tried saturating the network by copying about 100MB of data from an AmiNet CD-ROM in the CDTV's drive to a Bernoulli disk attached to my A4000. Even with all that activity, I was able to read transfer data back and forth between all three computers with no problems and little additional slowdown. The network did lose its connections a couple of times during the course of testing—once when I accessed the A4000's floppy drive locally—but overall it was solid.

The package supports network printing: You use the CMD program (see "Hidden AmigaDOS Gems—Part 3," May '94, p. 36) to route the printed output from your programs to a spool directory on the computer with the printer you want to use, and the spooler will print that file. There's no support, however, for networked modems (AmigaLink is too slow for that) or electronic mail.

Is AmigaLink the networking solution ►



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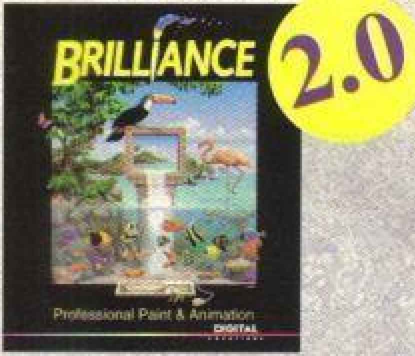


ANNOUNCING BRILLIANCE VERSION 2.0

Version 2.0 of Brilliance has been designed with productivity in mind. Several new features enhance this already powerful program. Features like *Flip Frames* that allows the animator to flip through drawings. *Rub Thru* that makes compositing easier. *Load and Save Tween paths* enabling much longer and repeatable brush moves. Faster and more accurate Tweening. *True View* option for magnification. And much, much more.

Brilliance!
The best just got better!

NOW! Without Copy Protection

NOW!
HOT NEW PRICE
Brilliance 2.0
$99.00
Upgrade 1.0 to 2.0
$49.00

Break The One Video Slot Barrier!

Video Slot Box

NEW!

INCREASE PRODUCTIVITY!

• Four Video Slots! • Three PC/AT bus slots (power & ground only) • 230W switching power supply • Two 5.25" drive bays • One 3.5" drive bay

The Video Slot Box is a revolutionary new mini-tower that expands any Amiga A2000, A3000, or A4000 to have four complete video slots, three additional PC AT bus slots (Power and Ground only) for compatible cards such as our Kitchen Sync TBC, room for two 5.25 inch half height devices and one 3.5 inch device (You can use this room for SCSI hard drives, optical drives, flopticals, tape drives, or anything else that fits.), and a beefy 230 watt switching power supply.

The Video Slot Box provides these solutions:

Use the Video Toaster with an Amiga A3000. Use more than one video slot product in your Amiga. Easily move your desktop video environment between Amigas.

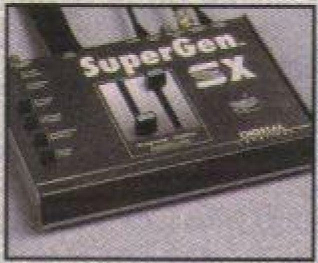
The slots in the Video Slot Box are complete video slots with all the capabilities of the video slot within the Amiga. You can place up to four video slot products into the Video Slot Box. A front panel selector lets you choose which product is actually in control of the video slot within the Amiga.

With products that are "video slot masters" such as the Video Toaster or a genlock, only one of them can be active at a time. The video slot box allows you to easily switch instantly between several such products within one machine without having to ever swap boards. And switch them with software!

Get The Most Out Of Your Amiga

Video Slot Box
$995.00

NEW!



SuperGen SX

S-VIDEO AND COMPOSITE GENLOCK & OVERLAY SYSTEMS

SuperGen SX

- Only broadcast quality S-Video genlock for less than $1000
- AGA compatible. Compatible with all Amiga models
- Two independent dissolve controls
- Software controllable
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SuperGen SX
$749.00

SuperGen 2000S

- Broadcast Quality
- For A2000 only - internal
- Built-in Proc-amp
- S-Video and Composite Input & Output

SuperGen 2000s
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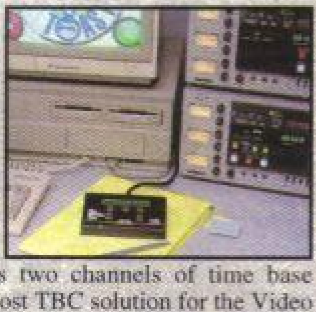
The Kitchen Sync



The Kitchen Sync provides two channels of time base correction - the perfect low cost TBC solution for the Video Toaster™.

With a Video Toaster, the Kitchen Sync provides a complete A/B roll editing system.

Two complete infinite window time base correctors on one IBM AT/Amiga compatible card • Absolute 100% broadcast quality • Composite or Y/C video in • Includes easy to use external control panel • No waveform monitor needed • Variable speed strobe • Freeze Frame, two rock-solid Freeze Fields • Low power consumption • Lowest TBC price per channel • Works with consumer grade VCRs

Two Complete Time Base Correctors On One Card!

Kitchen Sync
$1295.00

Genlock Option

Required to synchronize the Kitchen Sync to an external video source.

Genlock Option
$150.00

S-VHS Option

Required to enable S-VHS/Hi-8 (Y/C) video outputs.

S-VHS Option
$150.00

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for you? If all your Amigas have open Zorro II or III slots, you're probably better off going for faster networking-card options. But AmigaLink supports the older (read: network-problematic) A500, A600, A1000, A1200, and CDTV computers. Even CD32s are supported, if you attach an expansion chassis that adds a floppy port. If these machines are part of your computing equation, AmigaLink effectively stops the tiresome floppy-disk shuffle.

— *Denny Atkin*

MIDI sequencer software.

SEQUEL

Diemer Development, **$139.95**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Minimum system: **2MB.**
Recommended system: **4MB.**

Sequel is a new MIDI sequencer and sample-playback package that puts a different spin on the linear tape-deck analogy. The program presents a basic screen for recording 32 track patterns that can be linked together into songs. Two small, deceptively sparse Workbench windows possess layers of powerful features and functions that reveal themselves only as you explore the program.

Sequel sports some mighty convenient features once you get a handle on them or, in some cases, realize that they exist. For instance, you never have to click a track-record button—the next track is automatically activated for recording when you stop the sequencer. The most frequently used functions are immediately available with either a mouse click or a keyboard equivalent. There's no scrolling through nested lists of menus and submenus.

FUNCTIONAL FEATURES

Once installed using an included installer, sequencing functions are abundant. You can use the internal Amiga sounds and MIDI sounds on any track. Tracks can be named, disabled, recorded on, merged with one another, muted, soloed, deflammed, copied, cut, and pasted. A velocity meter shows how hard keys have been hit, and the sound section displays the MIDI channel, program number, octave, and MIDI volume, or the Amiga sound's name, pan position, octave, and volume. Like most headings in Sequel, the Track Name column performs multiple duty, depending on which name is displayed in the button.

Track Name allows a descriptive comment for each track. Clicking the button changes the display to show the MIDI device name, program name, or Amiga sound name for each track. The Length button shows the length and size of a particular track.

Few main program screens display as much information as the basic window in Sequel. To the right are two sets of control panels, wherein you determine the MIDI status of the computer, the status of the serial port in general, whether or not you use the internal sounds, and so

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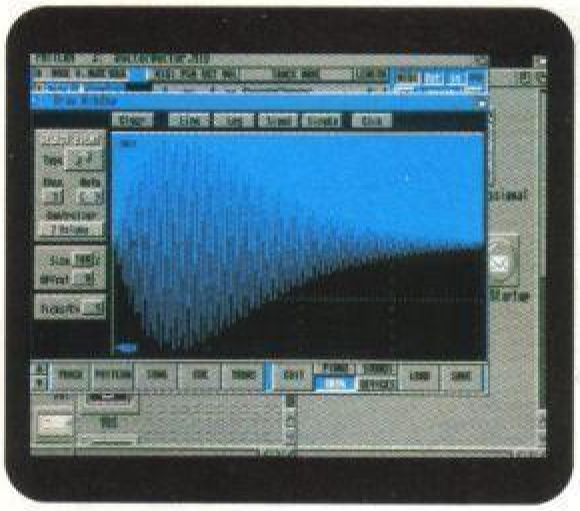

Music—Sequel style.

on. A Thru panel lets you direct user-selected events to any MIDI channel from your master controller in one of six different modes.

Split mode sends events to two different user-selected channels, splitting at middle C; Lo-mode and Hi-mode send out only low or high events, respectively; Lower and Upper modes send all events to their respective tracks; and Layer mode sends all events out twice, once to the lower and once to the upper track. All modes are available to both MIDI and Amiga sounds. You can vary the tempo from 28 to 320 beats per minute and the metronome can generate MIDI or Amiga sounds in addition to a visual flash.

Toggling the Panels button brings up the Record panel. Options there include linear or loop recording (both merge and overdub recording are supported), and a filter that determines which events will be recorded—whether internal, external MIDI, or MTC-to-SMPTE synchronization—complete with frames per second and start-time offset choices.

SONG PATTERNS

The initial Tracks window is actually a Pattern window. You can save the whole pattern or any section of a pattern, copy and paste a pattern's program settings, and initialize the tracks for a new pattern. Patterns are linked into larger works called Songs. You can insert patterns and later move them anywhere in the arrangement, and they, as well as the entire song, can be made to repeat. You can save a variety of complete pieces of music as patterns and "juke-box" them together in Song mode, or even have parts of a song designed in different patterns and hitch them together for the final production.

Sequel employs an event list for editing, though it's not as daunting as you might think. The list can autoscroll, playing the notes as it goes; list all or some events, display attack and release velocity; and mark blocks for editing, quantizing, looping, and so on—all in a manner more reminiscent of graphic editors than event-list editors.

The program can store four banks of cue points that you select for quick access to any portion of your music. The Auto-Copy feature lets you copy a section of material from any pattern and track to any other pattern and track in your song. The Draw window allows you to define a contour for any continuous controller message, including tempo. You can select from a predefined bank of contours, including sine wave, logarithmic and linear, or draw your own in freehand. You can even change the shape of the internal sound waveforms.

The Device list lets you create and assign patch lists of your favorite synths that Sequel can insert in the MIDI-device and program-name listings, and you can assign a separate device to each MIDI channel. Sequel also offers three different numbering schemes to accom-

Continued on p. 48.

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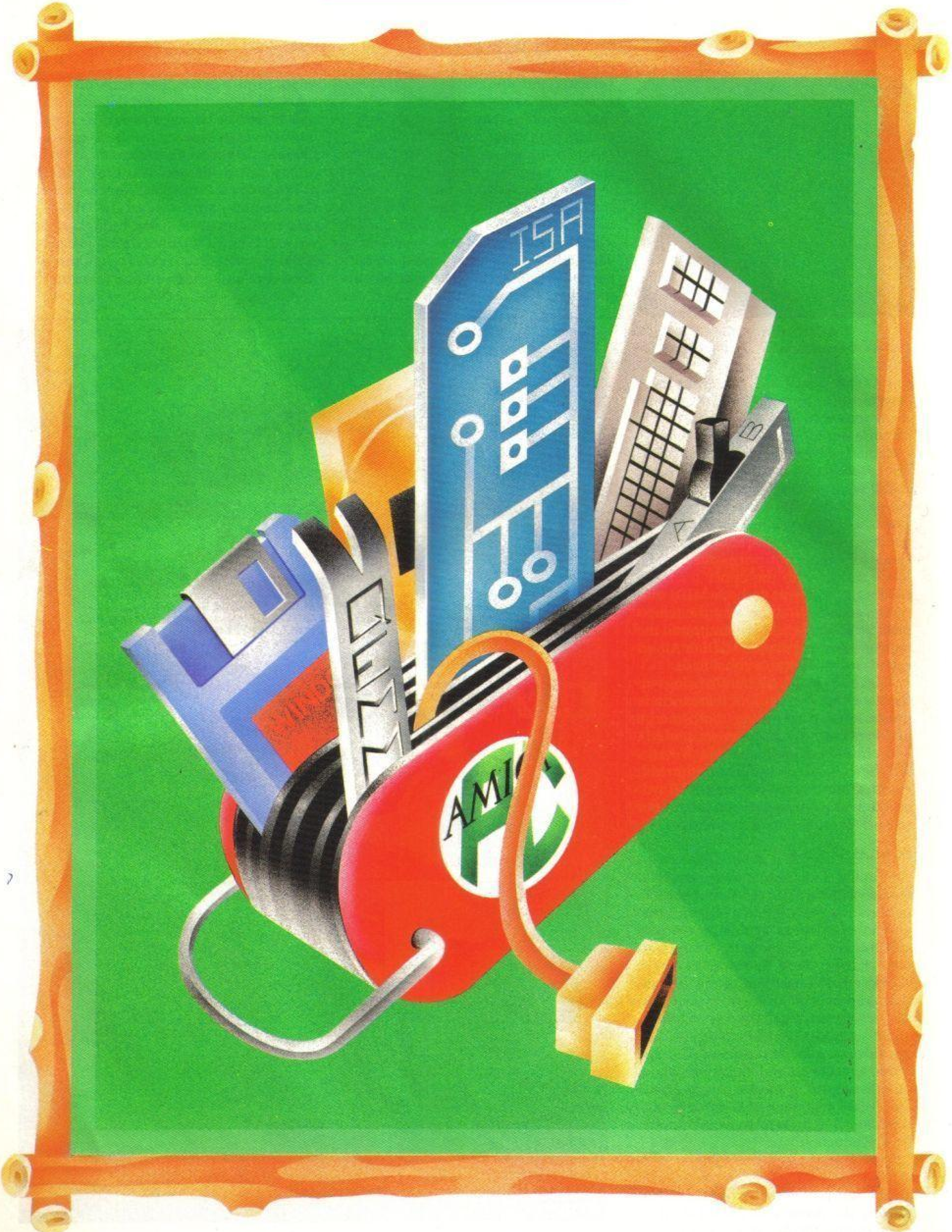
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CROSS-PLATFORM COMPUTING — PART 1: PC

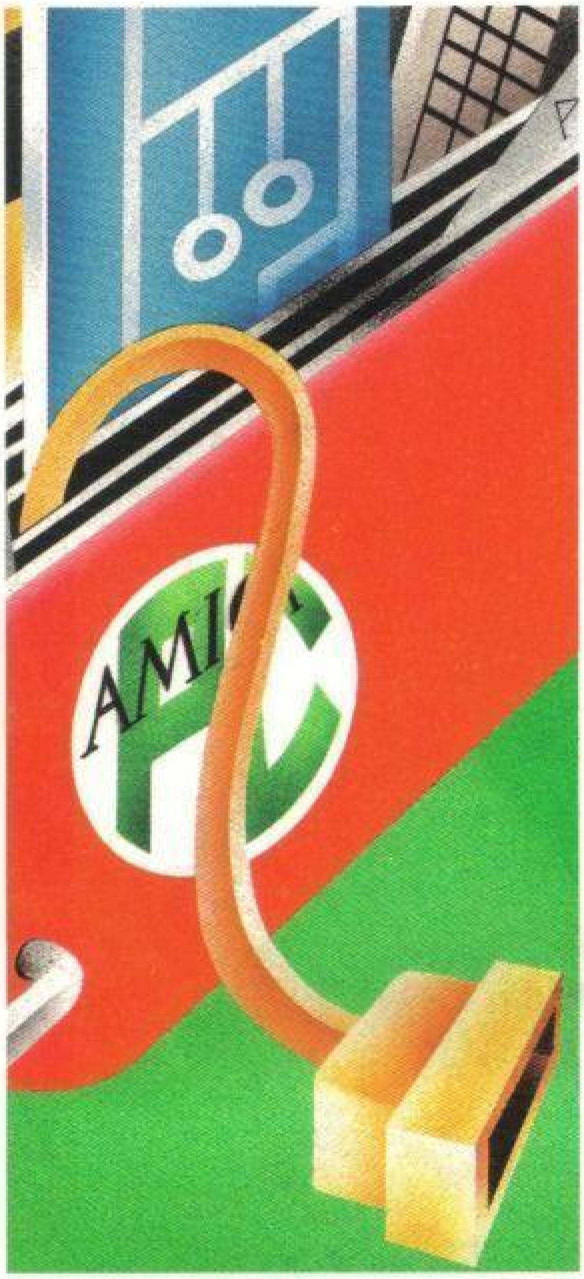
The Amiga User's PC SURVIVAL KIT

This month and next, AW will present a feature on cross-platform computing issues relevant to Amiga users. Here we focus on what you need to know —with specific recommendations—if you use Amigas and PCs in your work.

If this were a perfect world, there would be no need for cross-platform compatibility. Every personal computer owner would use an Amiga, and even today's most prominent PC and Mac developers would be at our beck and call. Alas, Eden eludes us; but perhaps we have the next best thing. The Amiga is unique among personal computers in several respects, not the least of which is its ability to emulate other operating systems. Although Power Macs can emulate PCs, the opposite is not true. The Amiga, meanwhile, can emulate both these systems with a little help from third parties. And thanks to superior Amiga software, it can elegantly swap files with scores of other-platform applications.

Because you have told us you want more information on cross-platform computing, we've decided to explore interplatform issues over the next two months. Here, we've put together a survival kit for Amiga owners needing PC compatbility. In the August issue, we'll ►

BY DAVE JOHNSON



motor into Mac territory.

WHO NEEDS PCs?

Nearly a quarter of all *AmigaWorld* readers claim to use some sort of PC or PC emulator in addition to their Amiga. Why is that? Well, some folks found the past year's rock-bottom prices on high-powered clones irresistible. Others purchased a Commodore 386SX Bridgeboard a few months back at closeout prices. Some people need a PC or emulator to be compatible with their office enviroment. Others simply want the best of both worlds. If you're one of these people, this article is for you. (For information on PC emulator hardware, see "The PC Connection," Jul. '93, p. 35.)

HARDWARE MADE EASY

One of the nicest aspects of using an emulator is the synergy you get from sharing components between the two systems. If you use a multisync monitor with your Amiga, for instance, you can access the same display from your emulator by attaching an A/B switchbox. The 386 and 486 boards are compatible with ***Vortex's*** **Monitor Master** ($128), an electronic switchbox that toggles between the Amiga and a VGA card with a simple Left Amiga-Q.

The real question, though, is what kinds of options are available for data storage. The conservative route is to add a dedicated IDE hard disk to your emulator. Vortex's Golden Gate emulator includes an IDE interface, so all you have to do is plug it in and go. Commodore Bridgeboard owners need to purchase a hard-disk kit that includes an IDE adapter. While not as expensive as they once were (hard disks are now well under $1 per megabyte), this path is certainly not a thrifty one.

Instead, explore ways your Amiga and PC can be data-storage partners. Most emulators allow you to dedicate a partition on your hard disk to MS-DOS or create a (much slower) MS-DOS virtual drive in an AmigaDOS file. SyQuest drives work particularly well as AmigaDOS devices with a partition for the PC. Not only does this allow you to create a variety of virtual machines (boot from the Windows SyQuest, DOS SyQuest or OS/2 SyQuest as necessary), but the drive can still read Amiga-formatted cartridges just fine.

A very popular way to increase storage space on PCs these days is by using global compression software. Utilities such as DoubleSpace (included in MS-DOS version 6) and Stacker (by Stac) can effectively double the space on a hard disk (much like using Nico François' PowerPacker—from Jumpdisk—on the Amiga). Before you double your hard disk, though, remember that disk-compression software (unlike PowerPacker) fundamentally changes the way your

WELL CONNECTED

If there's one truth in computing today, it's that you can never be too well connected. Computers aren't islands anymore, and people expect to be able to use files interchangeably, within any application and on any computer.

The Amiga has long had a distinct advantage when it came to portability of graphics files between applications: They are all IFF. When swimming in the bigger pool of PCs, though, we need to be able to tap into their multitude of formats, and let them use ours.

In Windows, one of the best file-conversion tools is HiJaak (Inset Systems). HiJaak has long included an Amiga IFF loader/saver, but still supports only traditional IFF formats (not IFF-24 or HAM). If you want to be able to use Amiga IFF-24 images in the Windows environment, you're better off with Black Belt's WinImages: F/x, an image processor based loosely on the company's Imagemaster R/t.

On the Workbench screen, ASDG's ADPro, GVP's ImageF/X, and Imagemaster read and write nearly every PC format conceivable. Cloanto's Personal Paint supports GIFs, and PageStream includes modules to read many graphics formats, including GIF and PCX.

Unfortunately, Amiga word processors stack up miserably at importing or exporting anything but ascii (text-only, without formatting) text files. WordPerfect reads and writes to the same file format as its PC version, though the Amiga version is no longer actively supported and its sister program on the PC is eons old. This adds up to a low level of functionality.

Impulse makes both MS-DOS and Amiga versions of the premiere modeling software, Imagine, and both programs use the same data-file format. Likewise, Black Belt's Windows products (Morph and F/x) create filmstrips and IShapes that Imagemaster R/t can load. (For further information on file swapping, see "Cross-Platform Computing," Oct. '93, p. 35.)

—DJ

hard disk is organized. If you are depending on CrossDOS to read a drive, don't compress it. Let's hope Consultron will eventually make CrossDOS compatible with compressed disks.

FITTING IN

I live by one somewhat rigid principle when computing on a PC: I use only Windows software. There are many reasons to avoid DOS software, the biggest of which is memory. PC software has to cram itself into the first 640K of RAM regardless of how much memory your machine has installed—and it's you, the end user, who typically needs the crowbar. If you have to use DOS-based software, you can optimize your memory by loading device drivers and other system software into memory beyond the first 640K. Luckily, you don't have to know much about MS-DOS to do that anymore; there are a number of utilities that automate the process. I'd recommend MemMaker (included with MS-DOS 6) or Quarterdeck's QEMM as the best digital crowbars.

Amiga expansion cards are standardized and completely auto-configuring, but PC hardware is a bit more complicated.

If you run Windows, most of those sticky memory -anagement problems go away. Even better, software incompatibilities (which even an optimist should expect to encounter with an emulator) are virtually nonexistent within Windows. The most likely type of problem you'll find in (or out) of Windows is with software that attempts to hit hardware directly—particularly hardware you don't actually have, such as a true PC floppy disk. Disk back-up and utility software in particular are notoriously fickle about needing to reach out and touch the real thing.

CUSTOM CONFUSION

We Amiga users don't have to worry about the nuts and bolts of our computer when installing new hardware. Amiga expansion cards are standardized and completely auto-configuring.

PC hardware is a bit more complicated, though. PCs use ISA, EISA, and Local Bus interfaces; they require the user to become expert at setting jumpers and configuring IRQs, DMAs, and hardware Addresses. (What were they thinking when they made this stuff up?) ISA, the most common type of expansion card, works with all PC-compatible, and is the sort that fits in the A2000, A3000, and A4000 when used with a Zorro-slot emulator. Both the Commodore and Vortex boards can handle nearly any ISA card you throw at them, including notoriously fickle network cards. If you do decide to throw some into the mix, be warned that installation of ISA cards is user-hostile. The best strategy to follow is to write down exactly how the board is configured (IRQs in particular) and store it somewhere you'll remember—in your computer manual, for instance. That way you can track down problems when installing another card later.

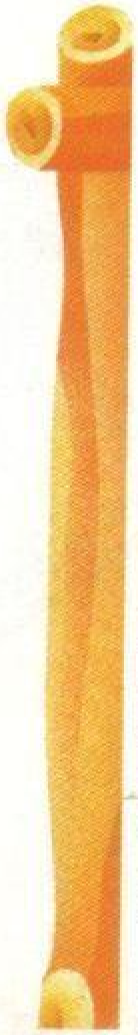
IRQs, incidentally, are Interrupt Requests, which are the means for getting short access to the computer's processor during each cycle. There are a limited number of IRQs in the system, and in most cases, Interrupt Requests cannot be shared. If your PC or emulator crashes repeatedly after you've installed a new component, it is often because the new part is trying to "talk" to the processor using the same IRQ as something else in your system.

Local Bus is the generic term for expansion slots that are designed to alleviate the bottleneck occurring in fast PCs at their slow data ports. Neither VLB (VESA Local Bus, a hardware standard established by a group of video-card manufacturers) nor PCI (Peripheral Connection Interface, a somewhat more sophisticated standard designed by IBM) will fit in an Amiga, because they have a completely different pinout than ISA cards. By the same token, don't mistakenly write off software that mentions VESA on the box—that's something else entirely. The same video vendors who brought us the VESA bus also established a video-display protocol to make it easier for programmers to use the hi-res modes of almost any display card. All we're talking about are video drivers, which are usually included with the software in question, or are at least available from the video card's manufacturer—usually via BBS.

SOUND, VIDEO, ACTION

What should you look for in a display card? For starters, don't be satisfied with the VGA emulation provided by the Amiga chip set, particularly if you already have a VGA or multisync monitor. Most computer stores sell no-frills VGA cards virtually for pocket change. Two-megabyte cards allow very high resolution, nearly true-color displays like 1024x768 in 64,000 colors, but the average card these days contain 512K or 1MB. Avoid expensive video-acceleration hardware, though. Your video speed is limited strictly by the ISA bus and you simply won't see a performance boost.

After a good video display, a sound card is another must-have. The PC community has finally agreed that the SoundBlaster (by Creative Labs) is a pseudo-standard, and there are a million cheap clones out there. One advantage to purchasing a true SoundBlaster card is that no SoundBlaster-emulation device drivers have to be loaded into memory, so you get extra base memory for the added cost of the real McCoy. Sound cards are the only expansion product ►



I've had trouble getting to work in an emulator environment, so be especially sure to keep the receipt.

Expansion space is always at a premium, particularly in a cramped A3000 or A4000. Rather than installing separate cards for sound and video, think about getting a multifunction board. GMR Productions (distributor of the Golden Gate emulators) sells a combination S-VGA, SoundBlaster-compatible, joystick port and SCSI interface on a card, all in a package that includes a double-speed CD-ROM drive. Computer stores like CompUSA are also littered with similar devices.

Speaking of CD-ROM, it is taking the PC world by storm. If you have a fast emulator, there's no reason why you can't jump on the CD-ROM multimedia bandwagon. Shopping around a bit may make a big difference. Single-speed (150K/s) CD drives are fast becoming known as half-speed drives; the standard has clearly become double speed. I would hesitate to even consider a triple- or quad-speed drive, though, as no existing emulator is fast enough for you to see any benefit from that extra investment.

Not all CD-ROM drive interfaces are the same, either. There are SCSI, IDE, and proprietary CD-ROM solutions on the market, and the packaging rarely tells all (few PC consumers are knowledgeable enough about SCSI to care). It really is in your best interest to get a true SCSI device, and here's why: You can use the same CD-ROM drive with both your Amiga and emulator or PC! Simply rig an A/B switchbox to the PC SCSI card and the Amiga SCSI interface. You can use the CD-ROM on the Amiga, reboot, and then use it on the PC (never switch sides while the computer is powered on). GMR Productions sells a complete SCSI switching package, or you can call a supply company like Redmond Cable and engineer it yourself.

MULTIMEDIA VIA PC

It's no secret that any Amiga can run graphical rings around a stock PC, but lately, some of the most exciting new software is being released for the PC. If you want to run these programs, you should configure your emulator or PC to meet multimedia specifications. The MPC standard establishes a minimum combination of assets such as the RAM, video display, and hard-disk space needed to run modern multimedia applications like CD-ROMs and games. Microsoft's encyclopedia, Encarta, and Virgin's spooky puzzle game, The 7th Guest, are examples of software designed specifically for MPC. There are two variations of MPC: MPC 1 and the newer MPC 2. The former is a fairly liberal guideline, designed for 1992-vintage computers. If you own at least a 386-based emulator, you can easily build a system that is MPC compliant.

Some key requirements for an MPC system are:

Requirements	**MPC Level 1**	**MPC Level 2**
Hard Disk	30MB	160MB
CD ROM	150K/s (single speed)	300K/s (double speed)
Sound	8 bit	16 bit
RAM	2MB	4MB
Video	640x480, 16 colors	640x480, 65,000 colors
Ports	MIDI/Joystick	MIDI/Joystick

Though only 16 colors are necessary for MPC Level 1, it turns out that most programs need 256 colors. If you can assemble these requirements, have no fear about taking home a box which requires MPC. When MPC 2 applications begin to appear, they'll need a level of performance that existing emulators simply cannot deliver. If you're a true PC power user, eventually you'll have to get a real PC (or wait for emulators that use the PCI slots in some future Amiga).

STAY IN THE LOOP

Last but not least, it sometimes helps to have an ongoing dialog with other Amiga owners who also use emulators or PCs. *Amiga Crossings* is a resource for cross-computing in both the PC and Macintosh domains. At $48/year, this monthly newsletter is an invaluable way to keep up on news, questions about emulation problems, and others' experiences. ■

Dave Johnson is author of the book ***The Desktop Studio: Multimedia With the Amiga****. He works extensively with both PCs and Amigas, and writes for several computer publications. Contact him c/o* ***AmigaWorld*** *Editorial, 80 Elm St., Peterborough, NH 03458.*

A BIG BOUNCE

Okay, now you've done it! You've created a 5MB animation on your PC that you simply must get to an Amiga. No wait, you've rendered a 3MB IFF on the Amiga that you need to place in a PC application. Either way, the file in question won't fit on a floppy disk. Can you make the switch, or is all hope lost?

Luckily, there is more than one way to skin this cat (my apologies to the cat). Very likely, the easiest solution is to mail the file to yourself. If both computers are in the same room, attach a null modem cable to their serial ports and transfer the file via the telecommunications software of your choice. (You can pick up a null modem cable at Radio Shack or any similar electronics store.) If the computers are too far apart for that to work, use a modem to upload the file to a BBS and download it using the other computer. You can even e-mail a file to yourself on a service such as CompuServe.

If the telecommunications route is out, you will have to get a little more creative. I know of two other ways to transfer files between the PC and Amiga, and one comes with every copy of ADPro. ADPro ships with MS-DOS, Windows, Amiga, and Macintosh versions of Splitz and Joinz, two utilities designed to break a Husky-size file up into Chihuahua-size bits that will fit on a series of standard floppies. All the Splitz and Joinz programs are cross-compatible, which means you can create a graphic on an Amiga, split it up and rejoin it on a PC, and then repeat the process to install it on a Mac as well.

If you have a SyQuest drive attached to both the Amiga and PC, the PC won't be able to read your Amiga filesystem but you can use CrossDOS to write in PC-ese from the Amiga. Be sure, when installing CrossDOS, to select the option for a real MS-DOS drive, and not a PC partition on an AmigaDOS device. Finally, some Amiga unarchivers can handle zipped MS-DOS files, like gzip, found on Fish disk 838.

—DJ

Head 2 Head

Comparative Evaluations
of Popular Amiga Programs

IMAGE PROCESSING

ADPro vs. Imagemaster vs. ImageFX

Imagemaster
24-Bit Image Manipulation for the Amiga
BLACK BELT SYSTEMS
IMAGE FX
GVP
2.5
ART DEPARTMENT PROFESSIONAL
Image Processing Power Made Easy

By Brent Malnack

AMIGA IMAGE PROCESSORS have more effects up their disk sleeves than Campbell's has soups. From subtle, utilitarian functions to wild effects, these programs enhance your graphics and expand your image collection. ASDG's Art Department Professional, Black Belt Systems' Imagemaster R/t, and GVP's ImageFX are the top contenders in this market. Each one offers such image-processing basics as cropping, scaling, resizing, rotating, and format translation. They share many effects, too: Each can make a photo look like an oil painting or an embossing, for instance. Further, all three can create truecolor images for output to disk—and display them on Amigas equipped with 24-bit devices.

The three differ, though, in terms of price, features, approach, quality, and more. This article will point out some of those differences in the hopes of helping you choose the best image processor for your needs.

Art Department Professional

The most popular of the three programs is probably ASDG's Art Department Professional (ADPro). ADPro earned its large following of graphic artists not only by being one of the first image processors on the Amiga, but also by offering great features. The program has undergone alterations over the years both in terms of looks and power, with the current release (version 2.5) featuring the most dramatic changes in its history. ADPro's menus are now configurable, so you can include your favorite loaders, savers, image operators, and commands. Image and screen information are also listed on the same List Interface with the configurable menus.

ADPro 2.5 has a huge manual, all 529 pages of it printed in small (10-point) type (the table of contents alone is 27 pages!). The manual begins with a few basic functions, then launches into 40 pages of tutorials cov- ►

ering everything from file-format translation to automated JPEG archiving. Every program feature is documented in exhaustive detail. If you look carefully, you can find pearls of wisdom along the way, gaining insight into pixel versus print aspect ratio, Floyd-Steinberg versus ordered dithering, and other topics.

Memory requirements for ADPro are directly related to the operations and images you use. The program runs fairly well with video-resolution images on an 8MB system.

SPECIAL EFFECTS

Operating the program is simple. You load an image, choose an effect or "operator," and display or save the result. This simplicity, evident throughout ADPro, makes the work fast and easy. Unfortunately, though, this benefit is somewhat offset by the lack of an Undo feature. Therefore, when you get a result you like, it is best to save the image before proceeding.

ADPro can use many different display modes. Owners of non-AGA Amigas are limited to a 16-color display in high resolution, or HAM modes for lower resolution images. With the AGA Amigas (A1200 and A4000), you can display images in up to 256,000 colors. ADPro also supports such third-party display cards as the Retina (Noahji's), Harlequin (Amiga Centre Scotland/Haitex), IV24 (GVP), and OpalVision (Centaur). And while it doesn't control Picasso II (Expert Services) directly, ADPro can save images to be displayed in full-resolution, 24-bit color on this board as well.

ADPro is the only one of these programs to offer direct support for NewTek's Video Toaster. The program can read and write Toaster Framestore format, and with its ability to access the board's framebuffer directly, ADPro has an edge over both Imagemaster R/t and ImageFX for use with the Toaster.

LESS AND MORE

Want to set up automatic processing for multiple images? There are a few ways you can do it with ADPro. You can use the included FRED (FRame EDitor) utility, which the manual describes as "a visually oriented list manager." FRED can call a series of individual frames and process them as a sequence; it can also call special image drivers within ADPro to perform animation effects on a series of frames. Like FRED, Multi-Frame (MacroSystemUS) is an icon-based batch processor. ARexx, now part of the Amiga's operating system (versions 2.0 and later) provides another means for batch processing, although using one of the icon-based programs makes it easier to set up multiple frame segments.

ADPro is also one of the few tools that allows for color reduction, a function essential in preparing artwork for broadcast and 3-D rendering. (Color reduction lets you do clean-up work in paint programs with fewer colors, making clean-up easier.) Having 16 or fewer colors is necessary when working with auto-tracing software such as Pixel 3D Professional (Axiom).

ADPro also differs from the other two products in that it does not incorporate paint and morphing programs. ASDG does manufacture MorphPlus ($295), however, which works directly with ADPro (the vector-

ADPRO 2.5
ASDG
$299

Serial-number copy protected.

Minimum system: 4MB RAM, Workbench 2.04, hard drive.

Recommended system: 2MB chip RAM, 8–10MB fast RAM, Workbench 2.04 or later, accelerated processor.

IMAGEMASTER R/T
Black Belt Systems
$99.95

Not copy protected.

Minimum system: 1MB chip RAM, 4MB fast RAM, Workbench 2.04, 10MB hard-drive space.

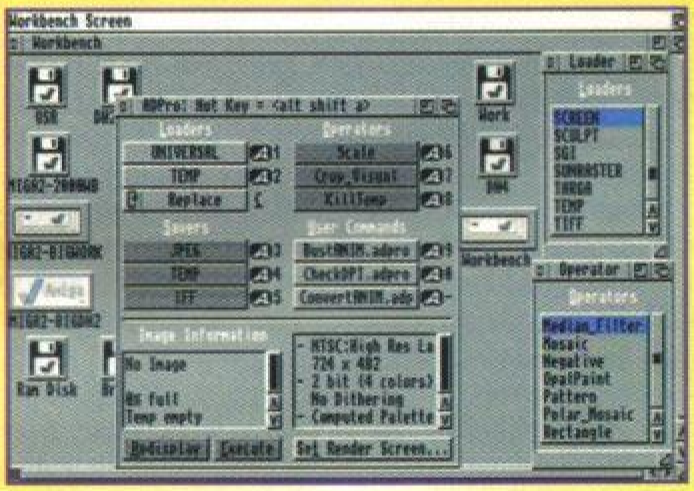
Recommended system: 2MB chip RAM, 8MB or more fast RAM, accelerated processor, floating-point unit.

IMAGEFX
GVP
$299

Not copy protected.

Minimum system: 3MB RAM, Workbench 1.3, two floppy drives.

Recommended system: 1MB chip RAM, 10MB fast RAM, hard drive, accelerated processor.


Workbench Screen
Workbench
ADPro: Hot Key = <alt shift a>
Loaders
UNIVERSAL
TEMP
Replace
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CheckDPI.adpro
ConvertANIM.adp
Image Information
No Image
Temp empty
- NTSC:High Res La
724 x 482
- 2 bit (4 colors)
No Dithering
- Computed Palette
Redisplay
Execute
Set Render Screen...
Work
Ram Disk
Workbench
Loader
Loaders
SCREEN
SCULPT
SGI
SUNRASTER
TARGA
TEMP
TIFF
Operator
Operators
Median_Filter
Mosaic
Negative
OpalPaint
Pattern
Polar_Mosaic
Rectangle

In its latest incarnation (2.5), ADPro now sports configurable menus—allowing you to include all your favorite loaders, savers, operators, and commands. Also, image and screen info can be listed with these menus.

based program is the most flexible morphing solution on the market). And while ADPro supports many image formats out of the box, to get the full range of ADPro's image-translation capability, you must purchase additional conversion modules. The Professional Conversion Module ($90), is necessary, for instance, if you want to convert TIFF, Targa, Sun, SGI, and other formats. You can add scanner support to ADPro, too, with other software. ASDG makes excellent scanner drivers for the Epson 600C/800C ($200), for example, and one for the HP ScanJet IIC ($200). All these add-on programs have the benefit of working from within ADPro, so you can perform ADPro functions without jumping from program to program.

Imagemaster R/t

Although Imagemaster is extremely powerful, it is aimed at the general Amiga graphics community. Its price-tools ratio is unmatched; in fact, with all of Imagemaster's effects, it is hard to imagine ever having time to try everything. Besides all of the basic image processing functions, Black Belt System's Imagemaster R/t ($99.95) offers a number of other features, including full-fledged paint and morphing programs.

DISTINCTIONS

Working with images in Imagemaster is a bit more complex than in ADPro. This is largely due to the unconventional terminology it uses and the number of steps it sometimes requires to perform a function.

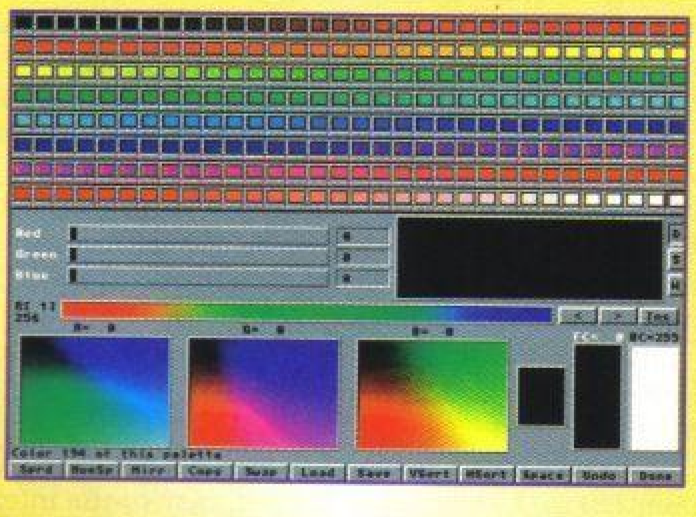
These things heighten the learning curve, which is stiffened further by the lack of a printed manual—a unique feature of Imagemaster. Instead of the more traditional manual, all of Imagemaster's documentation is in the form of online help. As the mouse pointer moves over any button in the interface, text appears describing the button's purpose. By pressing the Help key, you summon to the screen details on how to use the button along with some occasional tips and tricks. This online access is great to have and would be appreciated in many other Amiga applications. It is, however, no replacement for a printed manual, and having to learn the program this way can take much time and effort.

Imagemaster enjoys another distinction in being one of the most frequently upgraded Amiga products, as well. This keeps the program current, but keeping up with modifications can be challenging; it seems there is a new version every week.

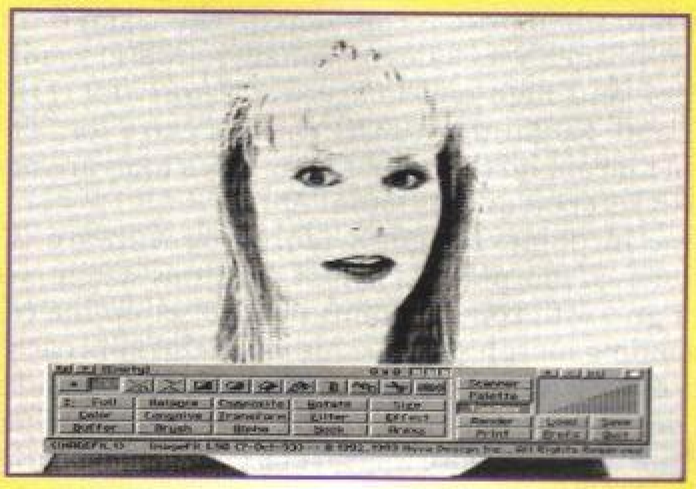
IN USE

Imagemaster's capabilities are quite impressive. Compositing multiple images can be performed better here than with any other Amiga software, as the program gives you complete control over edge transparency and blend. The paint program is also very capable, although the steps and terms can sometimes prove overwhelming.

Imagemaster was the first Amiga program to offer morphing, and using it to produce both still and moving morphs is easy. It uses a point-to-point morphing method, in which you match a control point on ►



Imagemaster R/t includes a very capable paint program, as well as offering a large collection of image-processing tools.



ImageFX enables you to apply a wide range of effects through the use of special user-defined brush tools.

one image to a conrol point on another.

Imagemaster's effects are best suited for processing single images as opposed to animations. Batch processing is possible, but the effects themselves are not easily animated over time.

Imagemaster includes an Undo buffer, which you can disable at any time to greatly reduce the amount of RAM necessary. This brings up a fundamental difference in the way that Imagemaster operates. All image buffers are stored at all times, until they are deleted, so multiple images, clips of images, and brushes are online simultaneously. This makes the program extremely flexible, but it means the system requirements tend to be higher for Imagemaster than ADPro.

ImageFX

GVP's entry in the image-processing market, ImageFX, in some ways fits between the other packages in price, ambition, and performance.

Like Imagemaster, ImageFX contains a paint program that is 24-bit internally and utilizes a variety of display options. You can output images directly to a number of display devices, including Black Belt Systems' HAM-E, DMI's Resolver, Impulse's Firecracker-24, or GVP's own IV24. ImageFX's paint software is more sophisticated than that of Imagemaster's, however, and it is much easier to use.

On the other hand, a charcoal drawing effect (described in the Tips section of the manual) is a four-step process using ImageFX, while it is simply a push of a button in ADPro.

Tool For Tool

GVP claims that ImageFX's features far outweigh those of ADPro when price is considered. This claim is true in that ImageFX includes morphing software, scanner drivers, and high-end image translators (for TIFF, GIF, and Targa) that ASDG charges extra for. This doesn't mean, however, that ImageFX's tools are necessarily as good as those from ASDG.

Case in point: ImageFX morphing software is a mesh-based morphing system. Under this system, you use a grid with control points on it to set up the corresponding morph subjects. Although this approach is both easy to learn and fast, it is inherently limiting and depends on the way a morph is performed. There is a limit to the distance that an object can travel during a morph: The nature of the mesh prevents the points in the grid from moving over neighboring points and columns. Thus, you cannot morph a bird in the upper-left part of the screen into a dog in the lower-right part of the screen. This may not present a problem for you at all, as the morphing process always looks more natural when the objects involved don't move too much. By contrast, though, ASDG's and Black Belt's morphing systems have no such limitations.

Best for Batching

ImageFX is the best batch processor of the three for novice users. The program can easily process image sequences with a number of effects. For example, it can apply an oil-paint effect to each frame of an animation. Unfortunately, not all of the effects are available in this manner, so an ARexx script might be necessary. Also, there are currently no products that perform icon-based batch processing for ImageFX.

ImageFX is also the only one of these programs to have built-in virtual-memory support. This enables you to use your hard drive as though it was part of your system RAM. Virtual memory is much slower than real RAM, so any time the system needs to access virtual memory, things slow down enormously. However, it is a useful option as it can mean the difference between being able to load a very high-resolution image and not.

Quick and Documented

ImageFX performs its tasks quickly. Loading and saving different format images was the fastest of the three.

GVP provides ample, well-written documentation for ImageFX in the form of a 210-page manual. The manual does not describe how to use the paint software, but instead describes the paint-tools collection. ImageFX's painting tools—including freehand draw, flood fill, airbrush, text, and undo—are the same as you would find in any paint program. The program makes a distinction between the brush and pen tools, though: A brush is a user-defined 24-bit drawing implement cut out from an image, while a pen is a one-color, standard drawing implement that uses one of the tools. Effects can be applied to brushes, but not to tools.

Summary

Black Belt has been committed to keep Imagemaster upgraded and bug free. Without question, the program is a great value, although its steep learning curve may prohibit the general Amiga user from becoming very proficient with it. Thankfully, a three-volume training tape set ($49.95) clears up a lot of mysteries. With the tapes, Imagemaster becomes a reasonable choice for basic paint/image-processing functions. Power users may reconsider Imagemaster, as well, knowing that this source now exists.

ASDG has been the heavyweight in the market with ADPro, and has some of the most powerful features available in any of the packages. This comes at the highest price of the three ($299), though this figure is not unfair considering its powerful features. ADPro's add-on products are well supported and well documented.

The newcomer, ImageFX has been gaining momentum in the market with a fast, easy-to-use interface and decent documentation. The lack of any real human technical support is frustrating and needs to be considered. All of GVP's telephone technical support has been shifted to an electronic voice-mail system. (The company also accepts faxes and e-mail.) The big problem is that you cannot call and instantly reach a human. Users who do not have a 24-bit or AGA paint program may find that ImageFX offers the best of both worlds. ■

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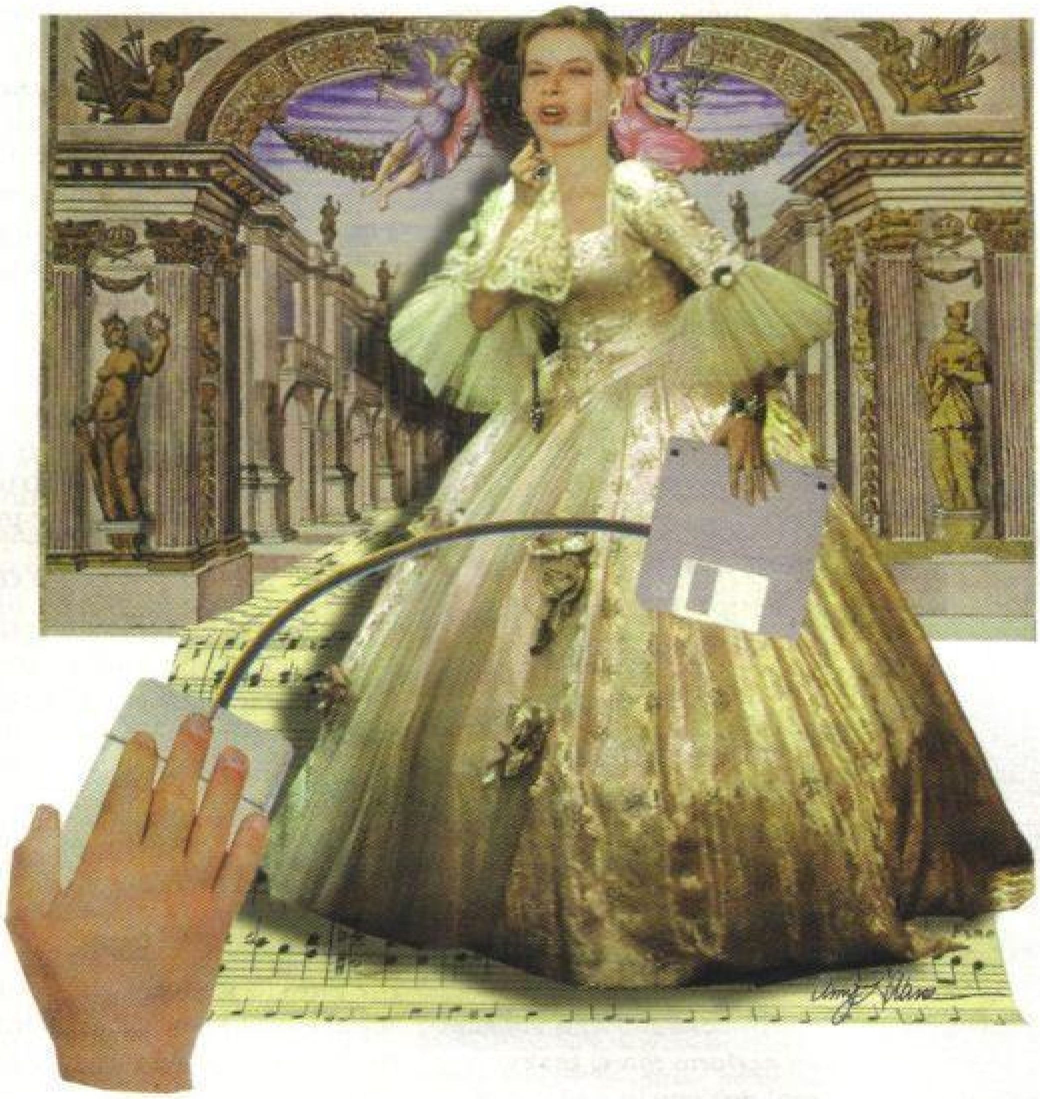
Bravo the Encore!

Making Use Of Scala's New MM300



We can only surmise that the developers of Scala had opera in mind when they devised the program that has become the *de facto* standard in multimedia-presentation software. After all, opera is the original "multimedia" concept. (Two 16th-century Italian dudes, Peri and Caccini, had the revolutionary idea of combining music and drama into one brand-new, multidimensional art form.) And what more gloriously successful presentation venue to choose as a name than Milan's famed opera house, La Scala?

The folks at Scala knew what they were doing, and that goes for the operation of the program, as well. Remember the first time you used the original Scala? After about 20 minutes, you were effortlessly creating a slideshow by tying together graphics, audio, and text. Scala worked according to a simple system, easily learned in that first sitting. Since then, Scala has grown into a program that, while still simple, allows a great deal more device control, interactivity, and graphics manipulation—a mountain of features lies just beneath the surface. This article will introduce you to some time-saving techniques for using the power of Scala MM300.

The new Scala takes advantage of the Amiga's Advanced Graphics Architecture (AGA) found in the A1200 and A4000. The program now requires 1MB of chip RAM and 2MB of fast RAM, which means that if you have a stock A1200 (with a total of only 2MB), you must sacrifice the expansion slot to upgrade memory. Scala recommends that A1200 owners choose a card that is also an accelerator (a wise decision anyway), which comes in handy now that MM300 has some image-processing capabilities.

EX MARKS THE SPOT

In Scala terminology, presentations are called scripts, and from the Scala main menu, a script appears as a list of events called pages. Each page may contain a variety of elements. On nearly every page, you will define elements such as background, wipe, and pause. ►

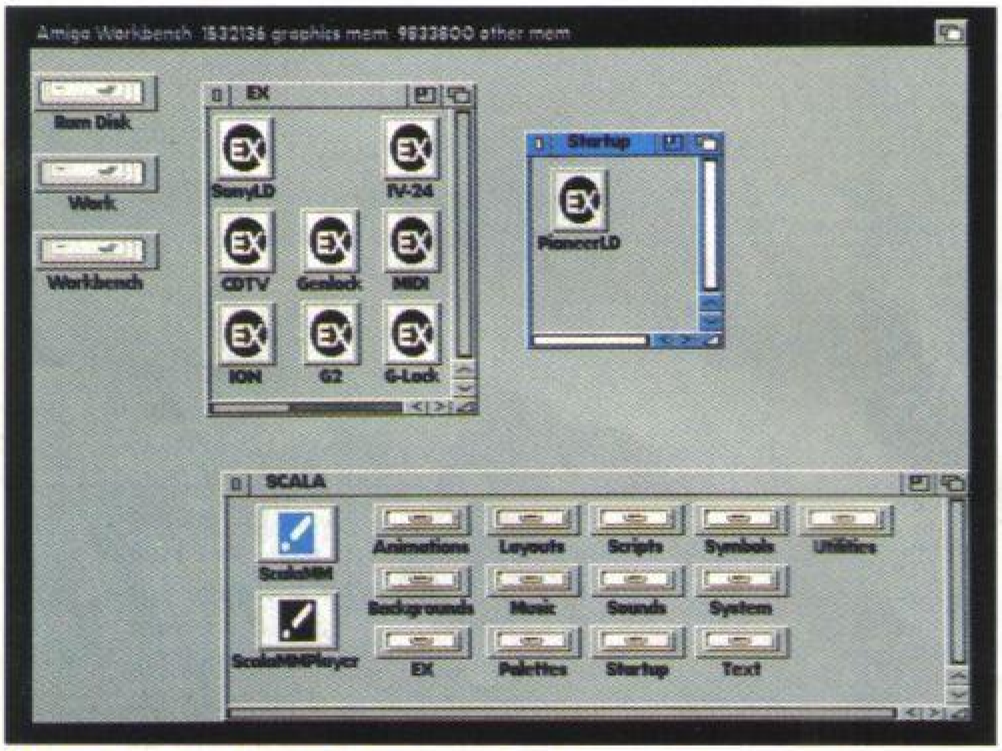
The opening-night reviews are in, and Scala MM300 has already drawn raves from the multimedia cognoscenti. Let's put the new version through its paces and see how it can help you in your presentation work.

By Mike Levin

You may also play sound, define a variable, execute a command, or control some external device. These elements are referred to as EXs (pronounced "ee-ex's"), and each one has its own column on the list.

By moving files between two drawers, you may add new EX columns to control devices such as laserdiscs and genlocks. The files are stored in the EX drawer and become active when you move them into the Startup drawer. You'll find both drawers in the Scala directory. When the program is run, there will be a column for each EX. For instance, moving the PioneerLD EX into the Startup drawer creates a new column named PioneerLD, from which you could issue commands to control a laserdisc player.

When you run Scala, the EXs may not all be visible because they will run off the right-hand side of the screen. To rearrange the order of the EXs, first select the System button at the lower-right of the main menu. This takes you into the System menu, where you'll find the User Interface button at the upper left. Clicking the tiny left or right arrows on this button switches the list of user-interface options into a list of available EXs. You can now rearrange their order. If you wish to keep this order indefinitely, click on Save Configuration. When you hit OK to go back to the main menu, the EXs will be in the new order.



EXs, the building blocks of a Scala script, can perform many tasks. For instance, you can have EXs shuffle external devices in and out of scripts by simply clicking and dragging.

You can then change the width of an EX column by carefully positioning your pointer between two columns on the main menu, clicking, and moving the vertical yellow bar that appears. This enables you to fit more columns on the screen or to see more units of measurement in the pause column.

First Things First

Before you begin a Scala presentation, decide where you are going to keep your files. If you plan on creating new pictures and sounds with outside programs, make a new drawer and put everything you create into it. When you create new files, use a logical naming system with file extensions. To make a custom button in the Scala file requester for this new directory, find the directory through a Scala file requester, and then hold down the Shift key and press one of the blank buttons on the right. Now press OK on the new requester that appears. You can later use Scala's Copy to Drawer function to make a new drawer containing only those files used in the script.

Once you run Scala, the first thing to do is select New and then the background for your first page. You can preview backgrounds before making your selection by using the Show button. You may also select multiple backgrounds simultaneously for a series of pages by holding down the Shift key during selection, or you can hit the All button to select every file in the directory. This is convenient for making instant slideshows; each background becomes a page in the script.

If you wish to apply the same pause to every page in the script, select the first pause in the list (make sure you're at the top), select the desired delay, then the To End button, and finally hit OK. You can type in pause and other numbers directly without having to use the arrow buttons, but if you do use these buttons, try holding down the Shift key for increased counting speed.

Work Closely With Your "Editor"

When you are making a series of pages that have the same background but are overlaid with different type, set the first page up as a template. While still in the editor, press the F3 key to make a new page that contains all your type-style information. Press F9 to toggle the text boxes on and off. This lets you see the already existing lines. If you want to make a copy of your current page, including all the type, press F4.

Pressing the List button is another way of viewing the information typed onto the screen. You can rearrange the lines to set the order for line transitions. When you set a Text Out wipe on a line, a second line is added to the list so that you can control when the wipe will occur. You may also use the list to enter type, especially for text crawls when the text has to run wider than the screen. To recover a cursor, double-click the line or press the number to the left of the line. Also, if you have accidentally added a lot of needless lines from the editor, you can easily delete them from the list. Then press OK to return to the editor.

If you'd like to create beveled boxes for text display, draw a rectangle with the rectangle tool. Then press the right arrow on the 3D attribute button to change it into a Bevel attribute button, which you then press to activate the bevel. By pressing the Layout button, you can increase the bevel size to whatever dimension you wish. The bevel option works, however, only on rectangles.

In MM300, you can click and drag items to move them in the editor. If you wish to move several items at once, surround them with the marquee (dotted-line box). You do this by clicking and dragging, beginning outside the objects you wish to enclose. All objects contained within the box or touched by the box will move as one. Any attributes you apply—such as font style and wipes—will be applied to all items in the marquee.

Sometimes when you move items around in the editor, however, objects don't get properly redrawn. When this happens, hit the F10 key to force Scala to redraw the screen.

A word of caution before we move on: Something mentioned in the manual that you should not do is create a blank page by clicking New and OK from the main menu. If you do so, you risk being unable to return to edit this screen later on. You should also not load and save from MM300 any MM200 scripts that use blank screens. Instead, use a supplied Scala background or create a blank page in DeluxePaint (Electronic Arts). If you find yourself stuck in this situation, however, you can work around it by downloading from CompuServe or Portal the archive called ScalaFixers.LHA, a set of ARexx programs that will both remove occurrences of blank screens and cause MM300 scripts to revert back to MM200 form.

Wipes and Resolutions

An important matter to consider when making a Scala script is the number of colors you plan to use. The general rule is to stick with 16-color, 640x400 screens. This is easy to do because all the Scala backgrounds, as well as the alternative collection of color palettes, are in 16 colors. On AGA machines (A1200s and 4000s), wipes occur smoothly and reliably with 16-color screens.

During wipes, you may notice that Scala often fades the color palette of one image into that of the next, thus eliminating the need to display both palettes on the screen at once. But with images of 128 colors or fewer, the correct color palettes of two images are displayed simultaneously when using wipes such as Center and Curtain. Other transitions such as Cube and Rollon will still use color fades.

Many transitions in Scala offer a number of variations. For instance, if you don't want a color fade to occur on wipes such as Rollon (above), press C (for clearpage) when you are in the Wipe menu. Also, try using the numberpad to change the direction of a fade from north to south, or try the s key for softfade and the d key for damped.

If a wipe appears choppy, experiment with other speeds. If you can't get acceptable performance from a wipe, choose another one, or reduce the number of colors in your background by selecting Load Other Resolution. Once you've reduced the colors, save the new background to your hard drive.

When wiping between 16-color images, you may choose Scala's most impressive transition, Superimpose, in which one image fades directly into another. On pre-AGA machines, Superimpose works only between four-color hi-res screens or eight-color lo-res screens.

When setting line wipes, try to avoid transitions that are painfully long. The idea is to make it look good and to help guide the audience—never make them wait. One method of speeding up transitions is to apply a line transition to several lines by using the desired wipe on the first line, and then the Link wipe on those that follow. The resulting wipe, which looks like a chain link on the Wipe menu, will occur as if all the linked lines were one object.

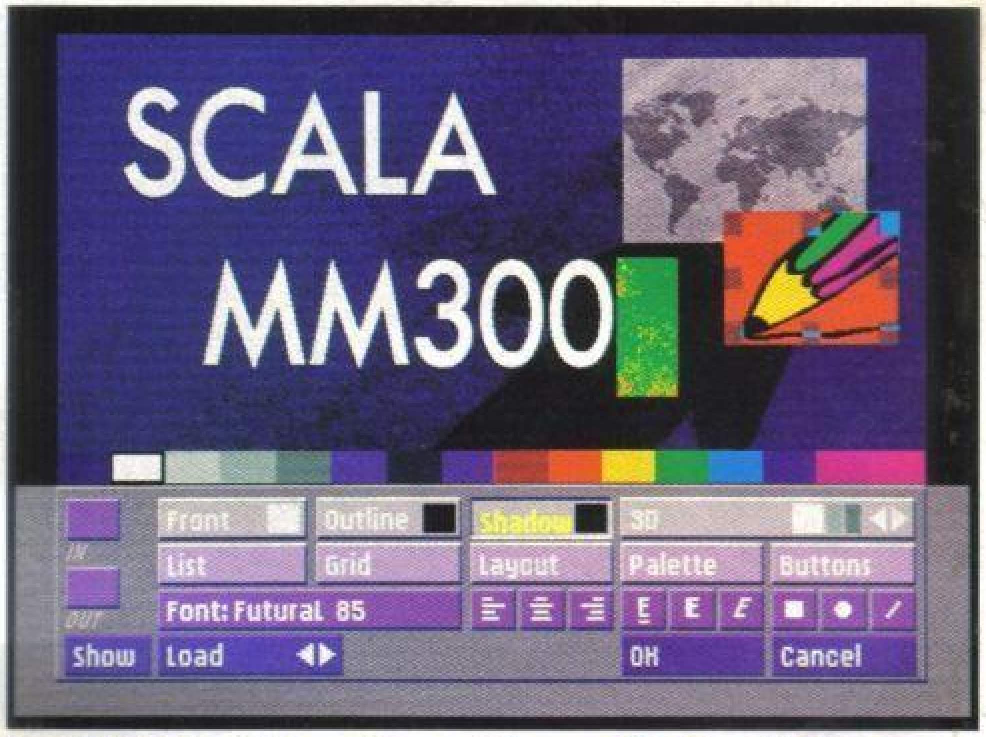
Remapped and Resized Graphics

You can now also load 24-bit files directly into MM300 as backgrounds or brushes. Scala will reduce the image to 256-color format and do fast Floyd-Steinberg (F-S) dithering. If you have multiple color brushes on the screen, with palettes different from that of the background, you can choose—via the Optimize button under the Palette menu—a new palette that best accommodates all the brushes and the background.

Once you have made such adjustments, the best thing to do is to save the adjusted background and brushes back to your hard drive as new files. Otherwise, each time Scala shows that page, it will have to recalculate all the color and size adjustments, resulting in a noticeable delay. Clicking the tiny arrows on the Load button from the Scala editor changes it into a Save button, with which you can save the individual elements. When you do this, Scala will ask if you'd like to replace the old file with the new one in the script. Answer yes. The resulting script should have no unusual delays.

Explore the Possibilities

Scala has come a long way since its early days as a video titler. This article has not even approached the interactive, ARexx, and variable features of the program. For instance, if you are a brave soul wishing to venture into the possibilities posed by ARexx, try saving one of your Scala scripts with an .AREXX extension. This will actually save the Scala script in ARexx format! You will not be able to load it back into Scala, but you can run it from a shell via the rx command while Scala is running.



Scala MM300's editor provides a wide array of features to help you create and orchestrate your multimedia presentations.

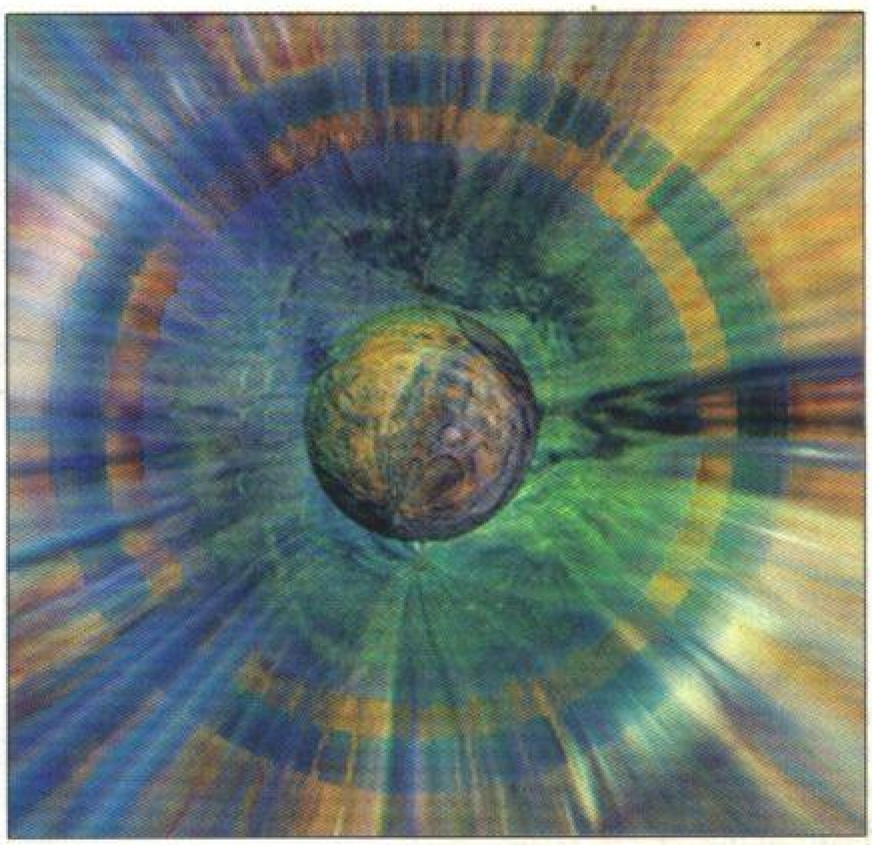
Scala is one of those rare applications that define an entire category of computer programs. But unlike word processors or desktop-publishing packages that can run equally well on various hardware platforms, Scala takes advantage of the Amiga's unique video, multitasking, and ARexx capabilities—making it a program difficult to match on other platforms. With InfoChannel, the high-end version of Scala, you can even provide automated distribution of Scala scripts over the telephone to unlimited numbers of InfoChannel player units—opening up myriad video-publishing possibilities.

All in all, Scala MM300 presents a richly caparisoned multimedia stage, peopled both with impressive, full-voiced leading features and a capable chorus of supporting elements that carry their spears well. ■

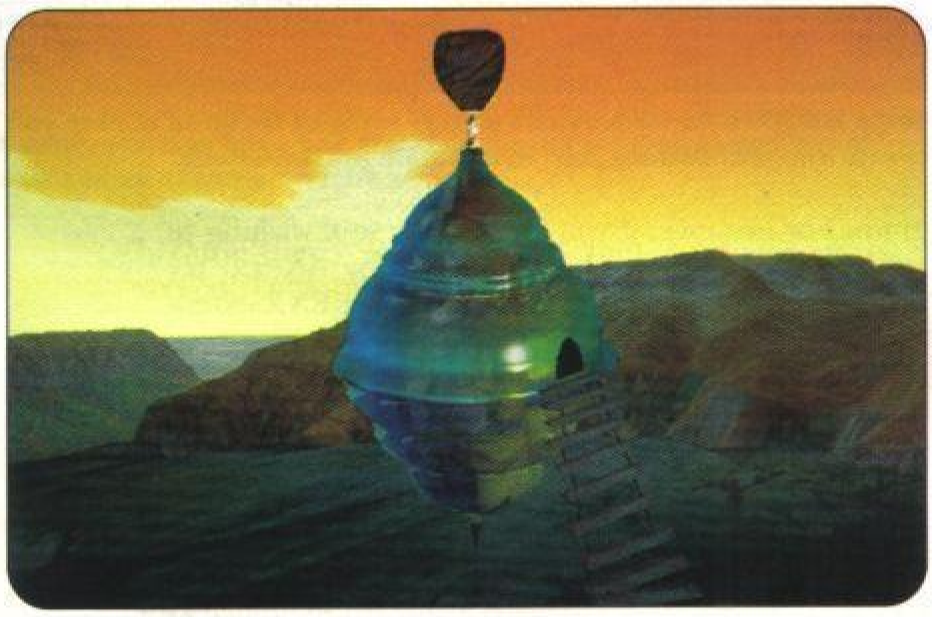
*Mike Levin is a graphic designer for Scala Studios, a division of Scala Inc. that offers multimedia-production services. Write to him c/o **AmigaWorld** or at Scala Inc., 2323 Horse Pen Rd., Herndon, VA 22071-3405.*

DIGITAL CANVAS

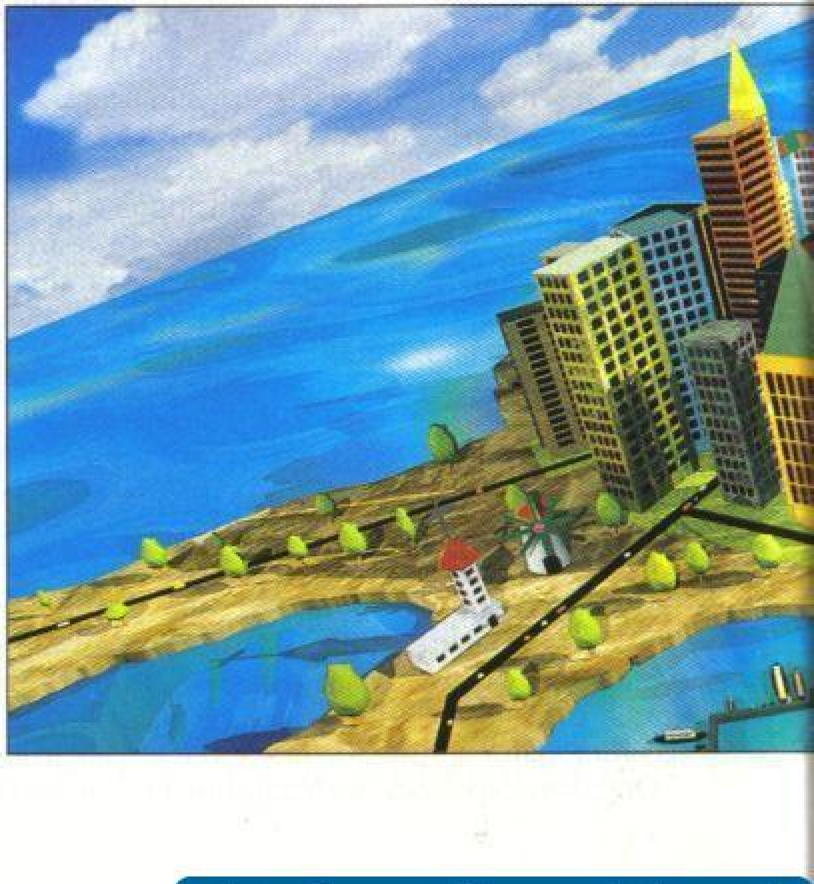
Need a reprieve from the worries of the world? Rest your eyes here—on the works of Amiga artists, whose vision and artistry can calm, inspire, and entertain.



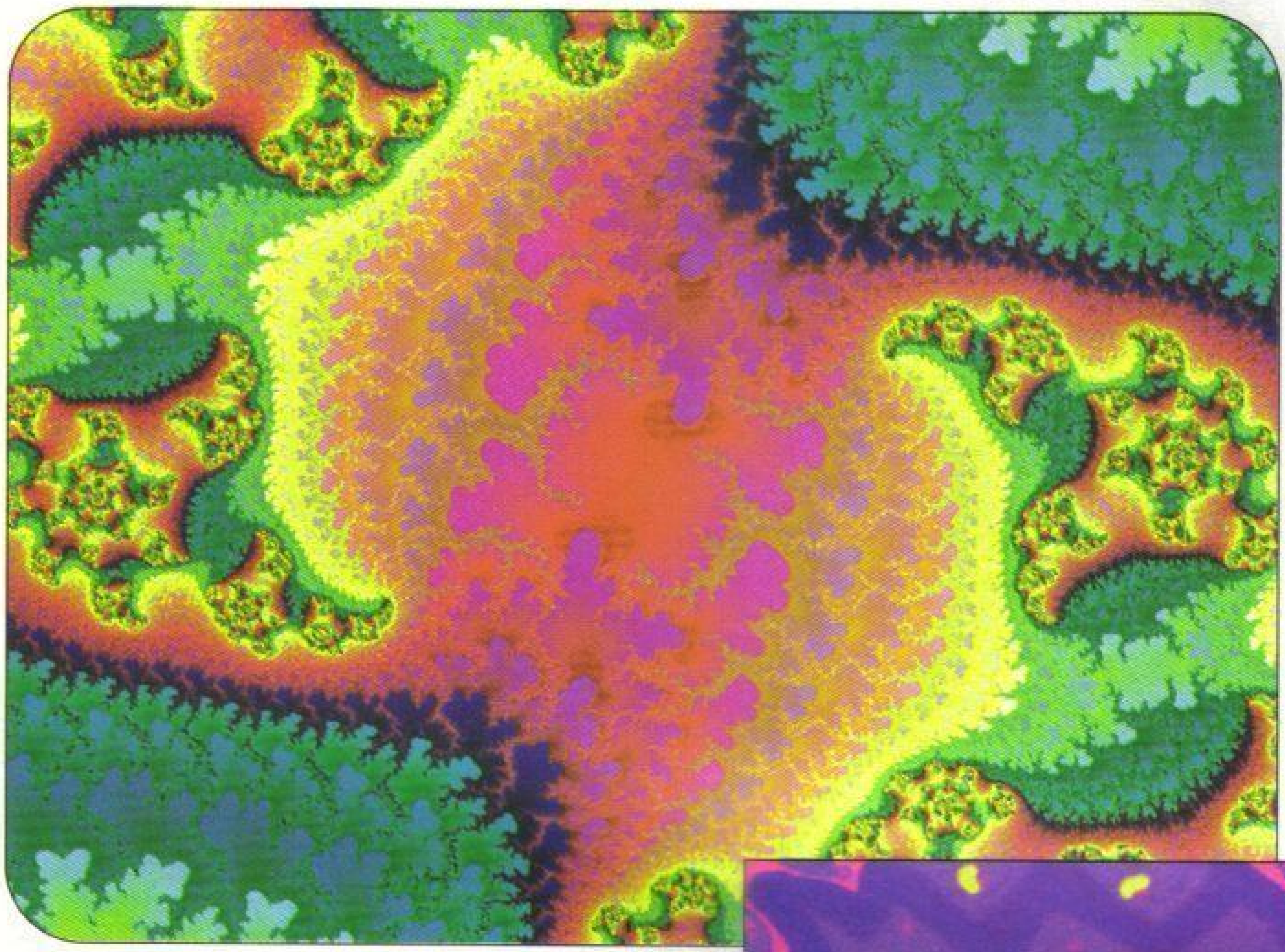
PHIL WOLSTENHOLME of Sheffield, England, has produced beautiful images that have graced the pages of *AmigaWorld* in the past (most recently in our May issue, p. 24). Since then, Phil has not been resting on his polygons. Instead, he's been collaborating on a 40-minute animation called ***Motion*** for Warp Records, the UK's leading independent electronic/dance music label. The image above is just one frame of the fantastic video. The project had Phil working for more than six months with Imagine (Impulse) on a single '040-based Amiga 2000.



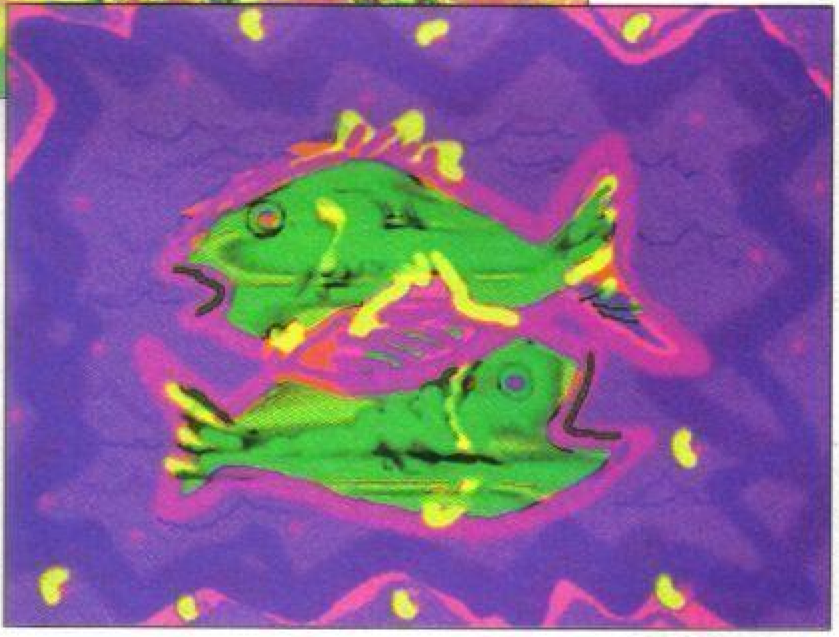
ROBERT S. BOYD, JR. lives in Seekonk, Massachusetts—just a short distance from the sea. The artist launched ***Top Ship*** from his new Amiga 4000 using a whole fleet of software, including Impulse's Turbo Silver, Virtual Reality Labs' Vista Pro 2.0, and Digital Creations' DCTV Paint.



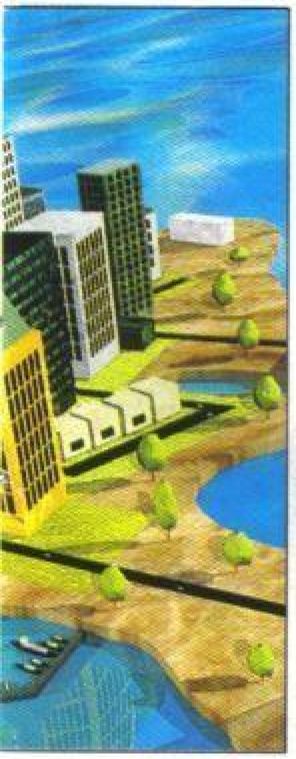
DIGITAL CANVAS



D.L. RICHARDSON, a long-time Amiga aficionado, used MegageM's Fractal Pro software and his Fargo Primera dye-sub printer to produce this gorgeous fractal print, which he named ***Spunk.*** Fractals are also the subject of Richardson's entertaining instructional videotape, "Animation 202: Fractal Freedom," from Myraid Visual Adventures.



The multitalented **JULIE PETERSEN** is not only an artist, but a writer as well (see "The CD Boom," June '94, p. 31). ***Fish*** is a great little piece she worked up using Electronic Arts' DeluxePaint.



We should have held a contest to guess the name of the animation this still was taken from. Would you have suspected ***Sexual Disarray Among Nonsecular Buddhist Monks?*** It's the work of Los Angeles-based 3-D animator/video editor **YARON ZOHAR**, who uses an accelerated, Toaster-equipped A2000. Zohar also called on Impulse's Imagine, ASDG's ADPro, and Axiom's Pixel 3D for this piece.

Club

Reportedly, the first Amiga users' group was formed in California. Now, "Club Amiga" boasts worldwide membership (this directory lists about 100 groups in the US alone!) so you're likely to find one near you. "Members only" benefits include on-site software demos, workshops, newletters, and so on. So, what are you waiting for? Join the club! *(Please send additions and corrections to AUG Listing, c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.)*

Want to mingle with fellow users, get some advice, find some great bargains, or just have some fun? Amiga users' groups are for you.

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Huntsville, AL 35815

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Phoenix, AZ 85071

Amiga Users Group of Yavapai County
1465 Coyote Rd.
Prescott, AZ 86303

Catalina Commodore Computer Club
PO Box 32548
Tucson, AZ 85751

Metro Amiga Computer Resource (MACRO)
PO Box 11681
Phoenix, AZ 86303

CALIFORNIA

A Bakersfield Area Commodore Users Society (ABACUS)
PO Box 40334
Bakersfield, CA 93384

Amiga Friends User Group
PO Box 4186
Huntington Beach, CA 92605

Amiga Users Group of Long Beach
PO Box 228
Long Beach, CA 90801

Greater Riverside Amiga Users Group
PO Box 15
Riverside, CA 92502

HUB Area Commodore Club
PO Box 398
Camptonville, CA 95922

Los Angeles Amiga Users Group
PO Box 947
Culver City, CA 90232

Northern California Amiga Club
13912 Dusty Oak Trail
Bella Vista, CA 96008

Original Amiga Users Group
6435 Hillegass Ave.
Oakland, CA 94618

Sacramento Amiga Computer Club
PO Box 19784
Sacramento, CA 95819

Silicon Valley Video Toaster Personal Video Production Users Group
2427 Hart Ave.
Santa Clara, CA 95050

3D Art Forum
1341 Ocean Ave. #349
Santa Monica, CA 90401

Valley Computer Club
PO Box 310
Denair, CA 95316

Ventura County Amiga Users Group and Video Forum
8842 Tacoma St.
Ventura, CA 93004

Video Toaster Group
4842 Via Colina
Los Angeles, CA 90024

COLORADO

Commodore Club of Colorado Springs
PO Box 25851
Colorado Springs, CO 80936

Rocky Mountain Amiga Users Group
PO Box 280403
Lakewood, CO 80228

CONNECTICUT

Fairfield County Amiga Users Group
18 Great Plain Rd.
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Danbury, CT 06810

Hartford Amiga Users Group
4 Bristol St.
Wethersfield, CT 06109

DELAWARE

First State Commodore Users Group
PO Box 1313
Dover, DE 19903

FLORIDA

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PO Box 16
Miami, FL 33116

Amiga

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Miami, FL 33165

Safe Hex International
PO Box 724
Port Richey, FL 34673

Sarasota Manatee Amiga Users' Group
PO Box 36057
Sarasota, FL 32433

Suncoast Amiga Club
PO Box 1311
Largo, FL 34649

Suncoast Commodore Club
1351 Gulf Blvd. #216
Clearwater, FL 34630

GEORGIA

Amiga Atlanta, Inc.
PO Box 49103
Atlanta, GA 30359

Amiga Users Klub
3529 Edgewood Rd.
Columbus, GA 31907

River Rates User Group
152-F Lamkin Rd.
Harlem, GA 30814

IDAHO

Boise Area Commodore Users Group
3213 North Kelly Way
Boise, ID 83704

ILLINOIS

Amiga Computer Enthusiasts
359 Miami St.
Park Forest, IL 60466

Champaign-Urbana Commodore Users Group
PO Box 716
Champaign, IL 61824

Commodore Club of Rockford
PO Box 10022
Rockford, IL 61131

Fox Valley Commodore User Group
PO Box 28
North Aurora, IL 60542

Knox Commodore Club
PO Box 494
Galesburg, IL 61402

McHenry County CCC
117 Wagner Dr.
Cary, IL 60013

Niles Amiga Resource Committee
Niles Public Library
Computer Lab
6960 Oakton St.
Niles, IL 60714

Shawnee Amiga User Group
PO Box 865
Carbondale, IL 62903

Western Illinois Programmers' User Group
E.L. Mills
RR 5, Box 75
Quincy, IL 62301

IOWA

Commo-Hawk Commodore Users Group
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Cedar Rapids, IA 52406

COUGAR
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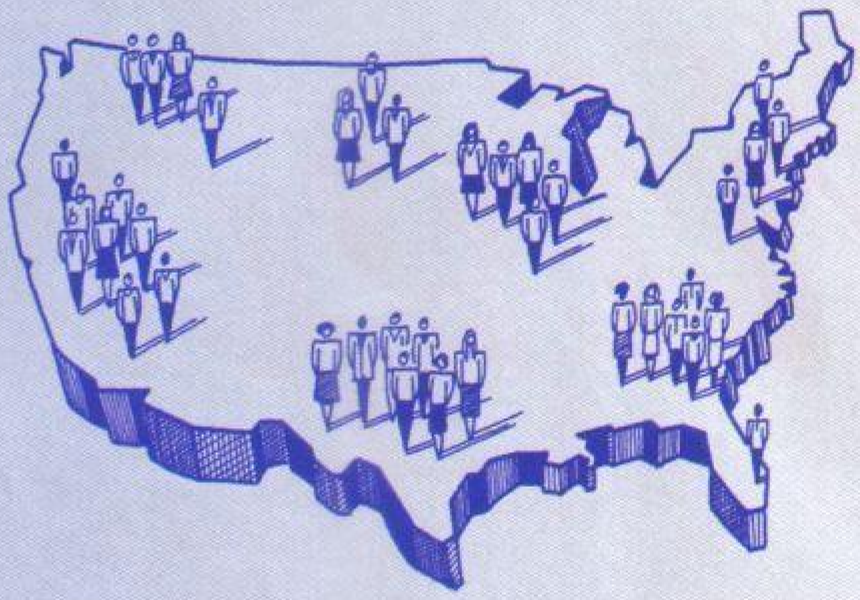

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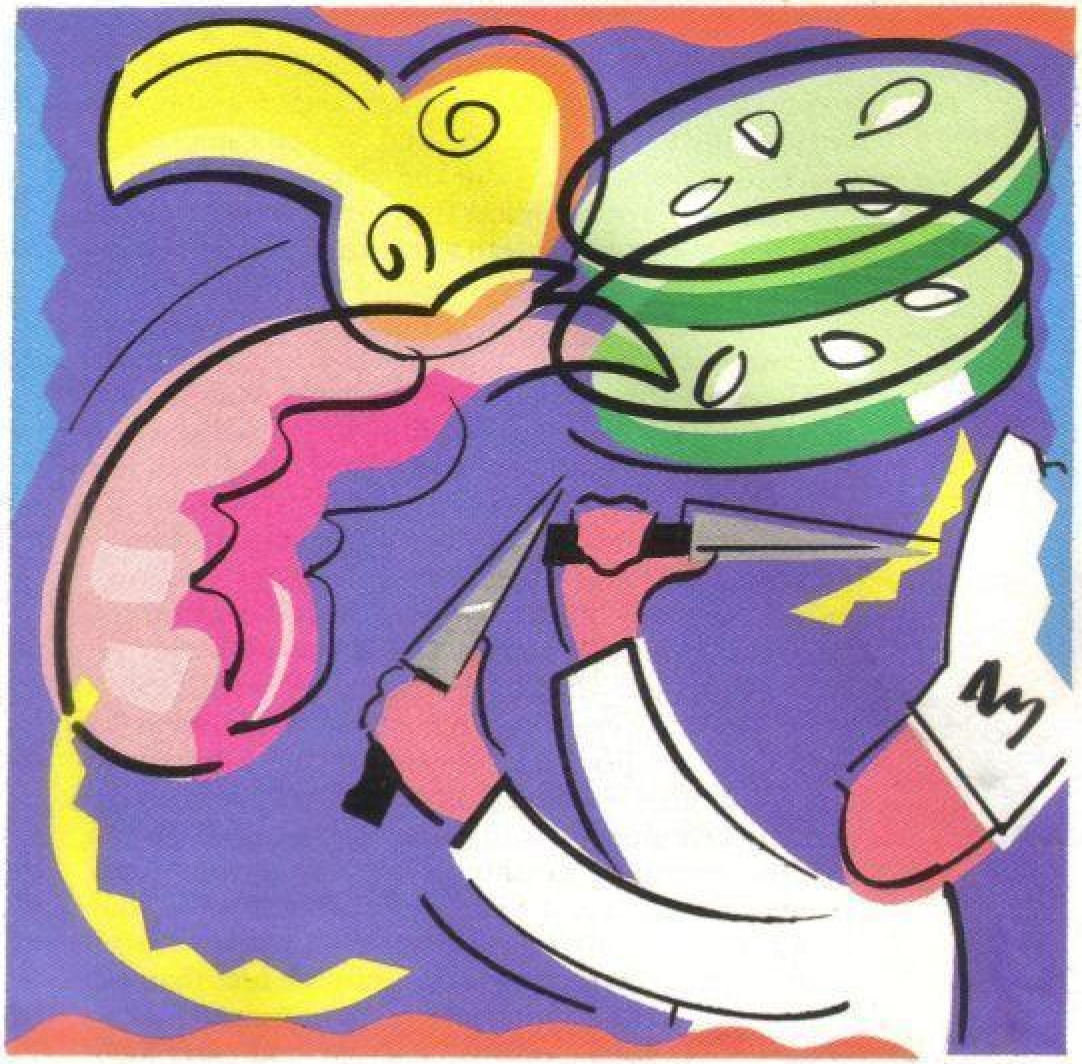
AREXX: ELECTRONIC GINSU

Part One

It slices. It dices. The amazing ARexx does it all. Our two-part series demonstrates, through descriptions and examples, that this versatile language can deliver a million-and-one customized cuts.



"QUICK, DEFINE AREXX!" If you shouted this into a crowd at an Amiga users' group meeting, you'd likely get several different answers. Some people would shout back "ARexx is a programming language!" Others may respond, "It's a command-macro language." Still others will call out "an interprocess communications language," which is a fancy way of saying it allows one program to talk to another. Actually, ARexx is all of these. Like the Ginsu knife you see advertised on late-night television, the language can do just about anything. But while ARexx's rich, complex nature makes it hard to define in a few words, it also makes ARexx a powerful tool that can enhance almost any computerized task.

Just what can ARexx do? And how much effort will you need to invest learning it? In this article and the one that follows, we'll explore the various facets of ARexx and answer those questions. This month we'll concentrate on ARexx as a programming language; in the next issue, we'll focus on its command-macro and communications aspects.

WHAT, ME PROGRAM?

Learning to program your computer, if only a little, can be very rewarding. The problem with ready-made applications is that they never seem to do exactly what you need. Programming allows you to tailor operations to suit your exact needs. While you are figuring out how to get a particular job done, you'll also be sharpening your computer skills. Also, programming is fun. There is a certain satisfaction in bending the computer to your will that you just don't get from video games.

Unfortunately, most people don't consider the joys of programming because they assume it is too difficult to learn. But ARexx is much easier to use than most other computer languages. Like Basic, ARexx is an interpreted language, which means you can execute the program as soon as you write it. You don't have to process it through a compiler and linker as you do with C.

Also, ARexx does not make strong distinctions between types of data as other languages do. You don't have to declare variables (symbolic names that can store different values) before you use them. You can assign the number 450 to a variable called Score and then assign the word "twenty" to the same variable. ARexx takes care of a lot of the detail work for you. The interpreter allocates memory as needed, and frees it up when it's not needed.

ARexx includes extensive debugging features that help you find your programming mistakes quickly. Because ARexx is related to the REXX programming language used with IBM operating systems (such as OS/2), much of what you learn about ARexx carries over to these systems. Best of all, Workbench versions 2.0 and later include ARexx. (ARexx is also available separately for $49.95 from ***Wishful Thinking***.)

Despite its emphasis on simplicity, however, ARexx remains a powerful language, capable of very complex tasks. It includes all the features you would expect from a complete programming language; variable expressions, loops, conditionals, and function calls. You need not master all of these concepts to start programming in ARexx, however. You can start doing useful work after learning just a few simple commands. Let's take a look at some ARexx programs.

FIRST STEPS

The traditional first program is one that prints out the words "Hello, world." The ARexx version looks like this

```
/* Our first program */

SAY "Hello, world."
```

►

BY SHELDON LEEMON

http://www.oldgamesitalia.net/ http://www.oldgamesitalia.net/

Notice that the program starts with a comment, enclosed by the characters /* and */. You can use this space to make a note about the program or not, but every ARexx program must start with a comment line. This tells the interpreter that it is an ARexx program. The next line does the real work of the program. The Say command prints out the message enclosed in parentheses.

There are three steps to creating and running this program. First, use a text editor to type in the two lines of text, and save the file with the name "REXX:Hello.rexx" (the REXX: assignment defaults to S:, which is the S directory of your Workbench disk). The Workbench includes two text editors, Ed and MEmacs. You will find an icon for MEmacs in the Tools drawer, but you must run Ed from a shell or via the Execute Command menu on the Workbench, using a command such as "Ed REXX:Hello.Rexx." I prefer using Ed because I can run it in a window on the Workbench, above the Shell window I use to test the program. You can also use a word-processing program to create ARexx program files, but if you do, be sure to save your script as text only because most word processors embed print-formatting codes into the text that will confuse the ARexx interpreter. Also, remember to press Enter at the end of each line; you can't have multiple statements on one program line unless you separate them with the semicolon character.

Second, make sure ARexx is running. You start the ARexx interpreter by running the RexxMast program in the System drawer. If you drag this program into the WBStartup drawer, ARexx will always be available when you start your computer. The third step is to type the command "RX Hello" either in a shell window, or in the requester provided by the Execute Command Workbench menu. You don't have to type the .rexx ending of the filename. The RX program will assume it's there unless you have specified otherwise. If all goes well, the words "Hello, world" will print out in your command window.

MORE POWER

The real power of the computer is that it can do things over and over again. You don't have to enter the Say command ten times to make your program print your message ten times. A loop, starting with the word "Do," performs the same set of instructions many times.

```
/* Loop.rexx */
DO FOR 10
   SAY "Hello, World"
END
```

When you run this program, it prints the message ten times. What if you don't want to print the same message each time, however? You can use a programming symbol called a variable to change the message.

```
/* Varloop.rexx */
DO pass=1 TO 10
   SAY "This is pass number "pass
END
```

Here, a variable called "pass" stores the loop number. This form of the Do command sets the value of "pass" to 1 on the first time thorough, then increases its value by one each subsequent run through the loop. Since we don't include the name of the variable in the Say string (the text in quotations), Say prints out the value of the variable, instead of the word "pass." When you run the program, it prints "This is pass number 1," "This is pass number 2," and so on.

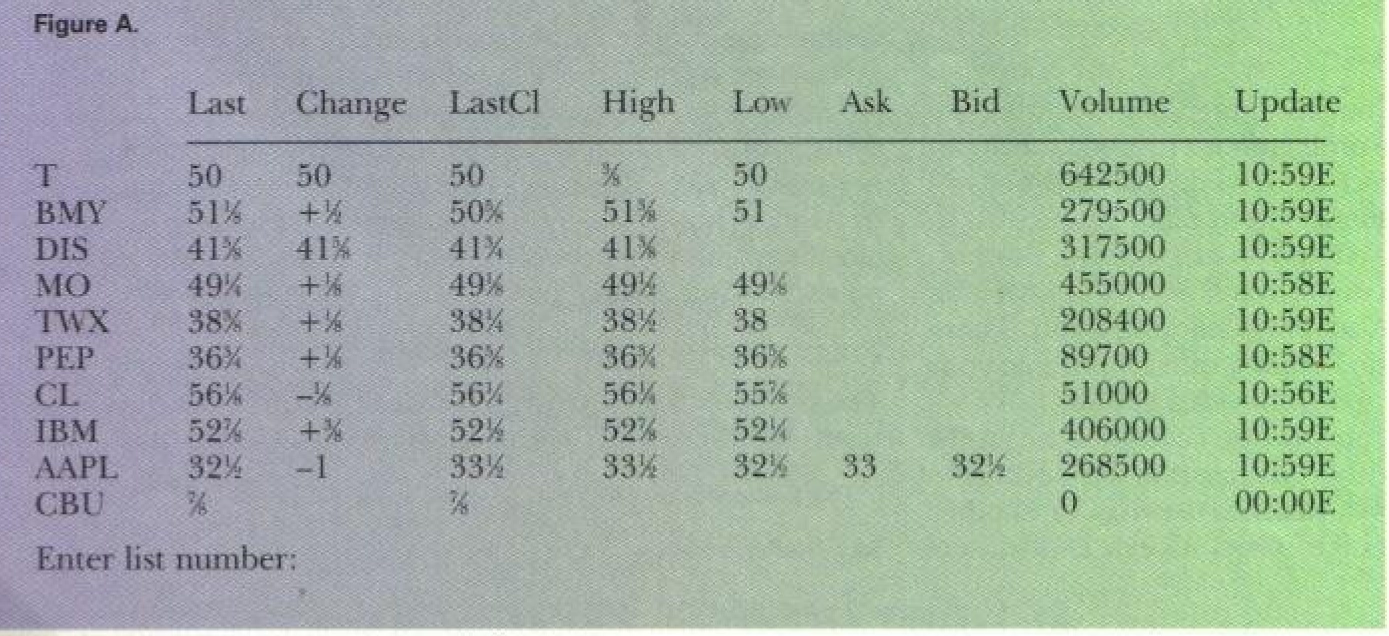
Another way to make your program more flexible is using conditional commands that allow it to react differently under various circumstances. Let's say, for example, that you want your program to use ordinal numbers (first, second, third, etc.) to tell what loop it is on. For the numbers 4–10, you could just add "th" to the number, but for the first three, you'd need a different ending. Using the If statement, you can make the ending different for different numbers:

```
/* Condloop.rexx */
DO pass=1 TO 10
   ending = 'th'
   IF pass==1 THEN ending='st'
   IF pass==2 THEN ending='nd'
   IF pass==3 THEN ending='rd'
   SAY 'This is the' pass || ending 'time through the loop'
END
```

The double equal sign (==) is a comparison operator that checks to see whether the value of pass is 1, 2, or 3. If it is, we use a single equal sign to assign a new text value to the variable "ending." Then, in the Say line, we put the sentence together, using the concatenation operator (two vertical bars) to combine the contents of the pass and ending variables into one word.

Select is another type of conditional command you could use for this job:

Figure A.



```
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AAPL   32½    –1      33½     33½    32⅜    33   32½    268500  10:59E
CBU    ⅞              ⅞                                 0       00:00E
Enter list number:
```

```
/* Selectloop.rexx */
DO pass=1 TO 10
   SELECT
      WHEN pass==1 THEN ending='st'
      WHEN pass==2 THEN ending='nd'
      WHEN pass==3 THEN ending='rd'
      OTHERWISE ending = ‘th’
   END /* end of SELECT block */
   SAY ‘This is the’ pass || ending ‘time through the loop’
END /* end of DO loop */
```

This version is a couple of lines longer, but it is easier to follow because of the indents. All commands within the Do loop are indented to the same level; commands in the Select block are indented to another level.

A-Parsing We Will Go

ARexx has a relatively small number of core commands, but one of them, Parse, makes it very easy to manipulate text. That's why I like to use ARexx to convert the information contained in a text file to a format I can use more easily. For example, I use the National Videotex Network information service to receive price information about a group of stocks. When the information comes through my modem, it looks like what you see in Figure A (opposite).

I'd like to store some of this information in a database, but I really only need the first two items of information, the ticker symbol that identifies the stock, and the last price. It would also be nice to format the information so that I could import it directly into my database. The usual format is one line per record, with each bit of information enclosed in quotations and separated with a comma. Sounds like a big job, doesn't it? But with ARexx, I can write a simple program—fewer than 20 lines—that does it (see Listing 1, this page).

To use this program, you must supply the name of a source file and a destination file on the command line. The command "RX Stocks ram:raw_info ram:stock_info" takes the information from the file "ram:raw_info" (captured with a modem) and saves the part we want in the file "ram:stock_info." The first command, Parse Arg, gets the names of the files, and puts them into the variables "source" and "dest" that are used to open the files. Then comes the main processing loop, which we repeat until the end of the file (EOF). First, we read a line of text (Readln) into the variable "buffer." Then we use the Parse Var command to extract the information we need. Since the information lines up nicely in columns, we tell Parse to put characters 1–7 in the variable called "ticker," 8–11 in the variable "price," and 12–16 in the "fraction" variable.

Next, we must eliminate the lines that don't have price information, and deal with prices where there is a fraction but no whole number. We use an IF statement to set "price" to zero if it contains blanks, and set price to a text value for the line that contains the heading (with the word "Last"). At this point, it's easy to tell which lines we want to process. If the price variable contains a number value (a Datatype of "N"), we process the line. We use Interpret to convert fractions—1/8, for instance—to a decimal (.125), and add this to the price. We use Compress to strip the trailing spaces from the stock ticker symbol, and we're ready to write the line (Writeln) to the destination file. The last two lines, which close the open files, are not really necessary because an ARexx program closes all open files when it finishes.

Listing 1

```
/* Stocks.rexx — A program to filter stock quote files */

PARSE ARG source dest . /* get source and dest file names */
source_error=OPEN(‘infile’,source,’Read’) /* open source file */
dest_error=OPEN(‘outfile’,dest,’Write’) /* open dest file */

DO WHILE ~EOF(‘infile’) /* process the source file to the end */

   buffer=READLN(‘infile’) /* read a line */
   PARSE VAR buffer ticker 8 price 12 fraction 17 . /*extract info*/
   IF (price==’    ’) THEN price = 0 /* if price is blank, 0*/
   IF ( ABBREV(fraction,’Last’) ) THEN price = ‘Last’ /*skip text line*/
   IF (datatype(price,’N’)) | (price==’    ’) THEN DO /* if not a number, skip */
      INTERPRET ‘last = ‘fraction||’+price’ /* convert fraction to decimal */
      ticker = COMPRESS(ticker) /* remove blank spaces */
      WRITELN(‘outfile’ , “ “ticker” “||’,’||” “last” “) /*print answer */
   END /*end of processing line */
END /* end of processing file */
CLOSE(‘infile’) /* close source file */
CLOSE(‘outfile’) /* close dest file */
```

But Wait, There's More . . .

For even more power, you can extend ARexx in a number of ways. You can write a series of useful functions in ARexx, for example, and save them in a file called REXX:Functions. Then, you can call them from other programs with a command such as

```
CALL REXX:Functions/Myfunction
```

Another way to add commands to ARexx is with libraries. These are Amiga-style system files, usually written in C, that contain additional functions. Once you use the Addlib command to add a library, you can use all of its functions as if they were part of the ARexx language. There are lots of freely distributable ARexx libraries available on bulletin boards, the ***Fred Fish*** disks, and on information-service forums. They add everything from control over the serial port, to Amiga graphics commands, to transcendental math functions. There are also commercial offerings, including **REXX Rainbow** ($48) from ***Dineen Edwards Group***.

The most interesting way to extend the power of ARexx, however, is to have your program communicate with another program. One such program that can communicate with ARexx is AmigaDOS. You can include any AmigaDOS command in an ARexx program, using the command Address Command to specify that you want to talk to AmigaDOS. For example, to make a new directory called RAM:Test, you'd use the command

```
ADDRESS COMMAND ‘makedir ram:test’
```

That has potential. But the real fun starts when you begin "talking to" applications programs such as your word processor, spreadsheet, database, desktop-publishing program, or image-processing software. Next month, we'll take the programming concepts we've explored here one step further, and examine the subject of programming other programs. ■

Sheldon Leemon, a computer/video consultant and instructor, is the author of two books and scores of articles covering the Amiga. He also serves as Amiga Forum Manager on National Videotex Network. Write to him c/o ***AmigaWorld,*** *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

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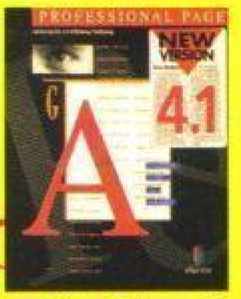

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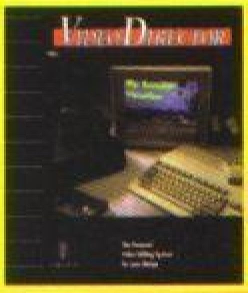

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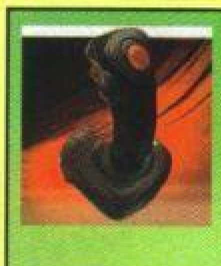

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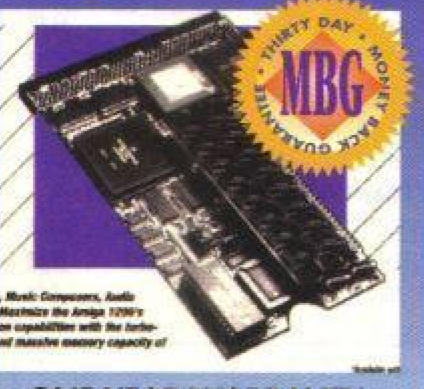

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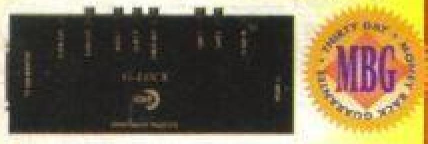

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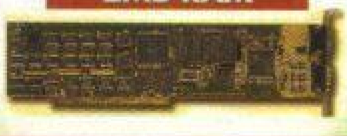

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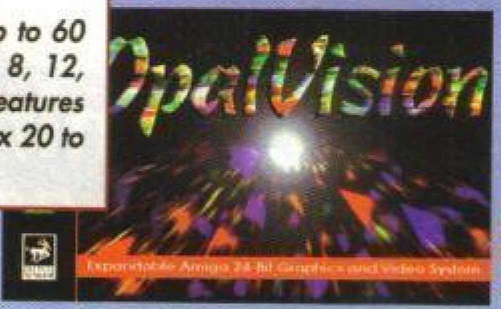
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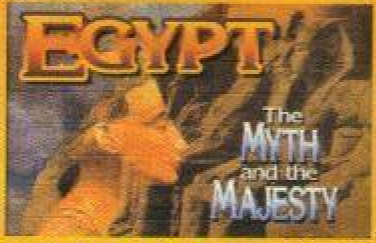
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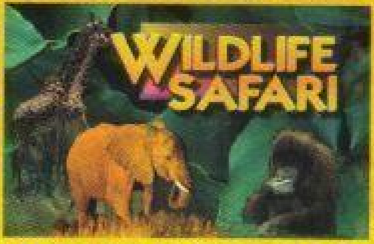
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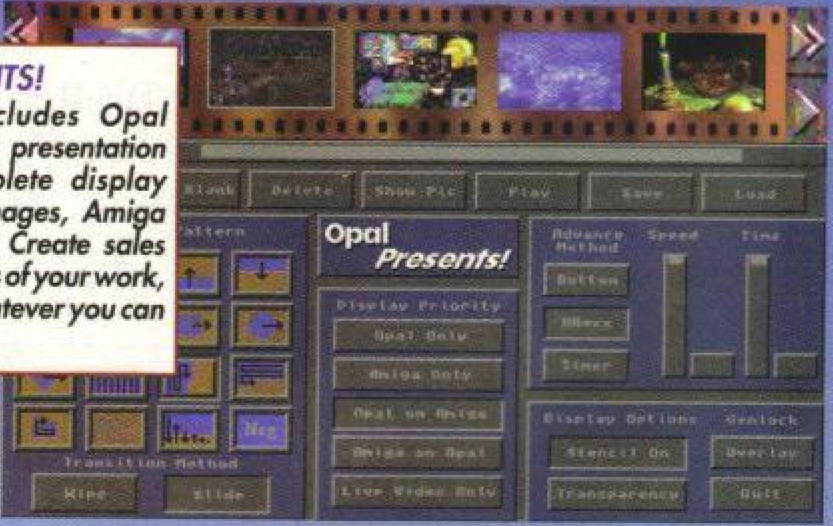
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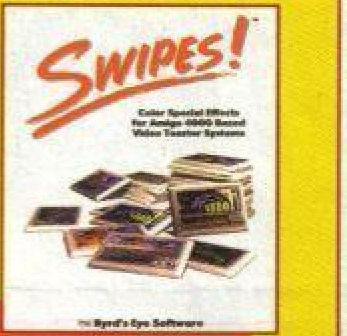
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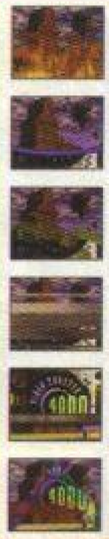

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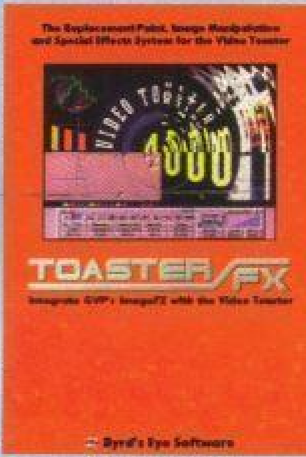
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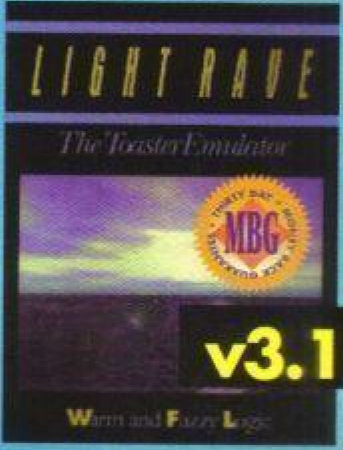

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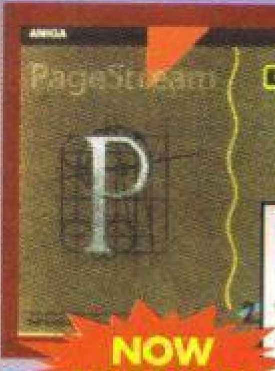

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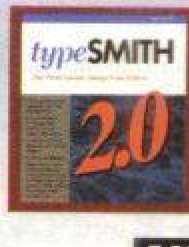

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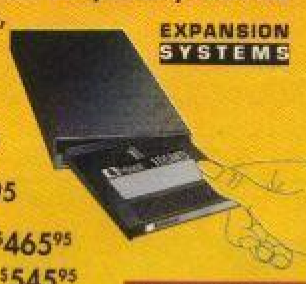

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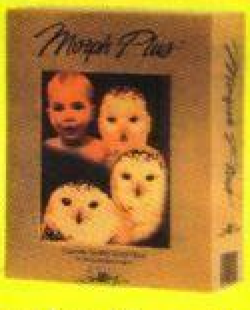

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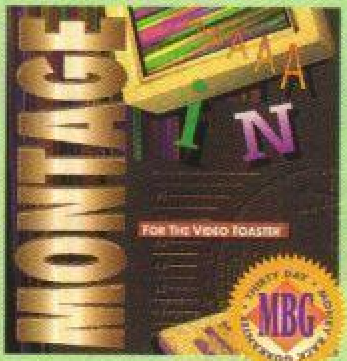

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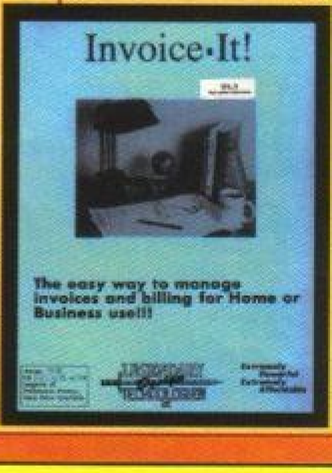

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ACCENT ON GRAPHICS

65

◆

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

◆

By Joel Hagen

The "Art" of Science and History

I RECENTLY HAD the pleasure of participating in a conference on Planetary Data Visualization put on by a research institute in southern California. I showed a series of Amiga experiments in which general-purpose graphics software was used in creative ways. A paint program, for example, can be used to do investigation and analysis.

If you are an educator, this approach can be a way to involve students in active explorations of art, science, and history on the computer. Mars is the thread linking my experiments here, but it could just as well be European history or desert ecology. For this month's column, I will describe the series of experiments I did for my presentation at the Planetary conference. Don't focus too much on the techniques, but rather on the concept of using software in new ways.

THE LIVING PAST

Cassini did a series of drawings of Mars in 1666. Locating these in a library book, I brought them into the Amiga using an Epson scanner linked to ADPro (ASDG). You could also use a video camera or digitizer. In DeluxePaint (Electronic Arts), I cut the individual drawings of the planet as brushes and registered them on a sequence of animation frames. This brings a new dimension to data three centuries old as the features of Cassini's Mars move across its face, tracing its rotation. The same animation technique can be applied to any sequence of still images. Early Mars images from astronomy books yielded animations of a moving cloud photographed in 1926 and a full rotational cycle shot from the Lowell Observatory in 1971.

I turned my attention to historic maps and scanned one Schiaparelli had drawn from observation in 1877. (Be aware of copyrights as you think about your intended use.) I scanned from a scientific magazine more than 75 years old for the illustration accompanying this article. Using techniques explored in an earlier article on planet building ("Around the World in 80 Frames," Oct. '91, p. 38), I turned that map into a rotating planet.

Briefly, the method in DPaint involves grabbing an animbrush from a section of a moving map, then using it to Wrap Fill a sequence of circles. The result is the illusion of a spinning planet. The Mercator map projection distorts into a good approximation of a hemisphere as shown in the illustration. In preparing your map you may need to add a blank area north and south of the maximum latitudes represented if they are less than 90 degrees. I have used this technique to "restore" the planet as it was seen by astronomers over many decades.

In January 1993, I had the opportunity to paint Mars from direct eyepiece observations at Lick Observatory as Mars came closest to earth. I used the Amiga to create reference material to aid my observation and painting. Scanning a USGS (Geological Survey) Mars map derived from Viking space missions, I used DPaint to create a 24-frame animation of the spinning planet. The eyepiece of the telescope inverted the image of Mars, but the Amiga made it simple to invert the map and spin the planet in the proper direction relative to our viewing instrument. I printed out the 24 frames on a single page with hourly notations about the central meridian. This provided a visual reference each night to interpret the "albedo" (light and dark) features I was seeing. For Mars, 24 frames was serendipitous as Mars' rate of rotation is similar to our own, a little over 24 hours. For other planets, the number of frames would need to be adjusted to match its rotation period in order to use the sequence as a clock reference.

For instant color drawings, I scanned my pencil sketches and then used a paint program to change the palette of the image from gray to a gradient of color matching what I perceived through the eyepiece. I also made detailed paintings directly in the computer. Later I produced large acrylic paintings for exhibition based on these renderings. I used the Amiga monitor

If you're an educator, or just like to experiment on your own, these projects may provide some fascinating possibilities for linking art with science and history.

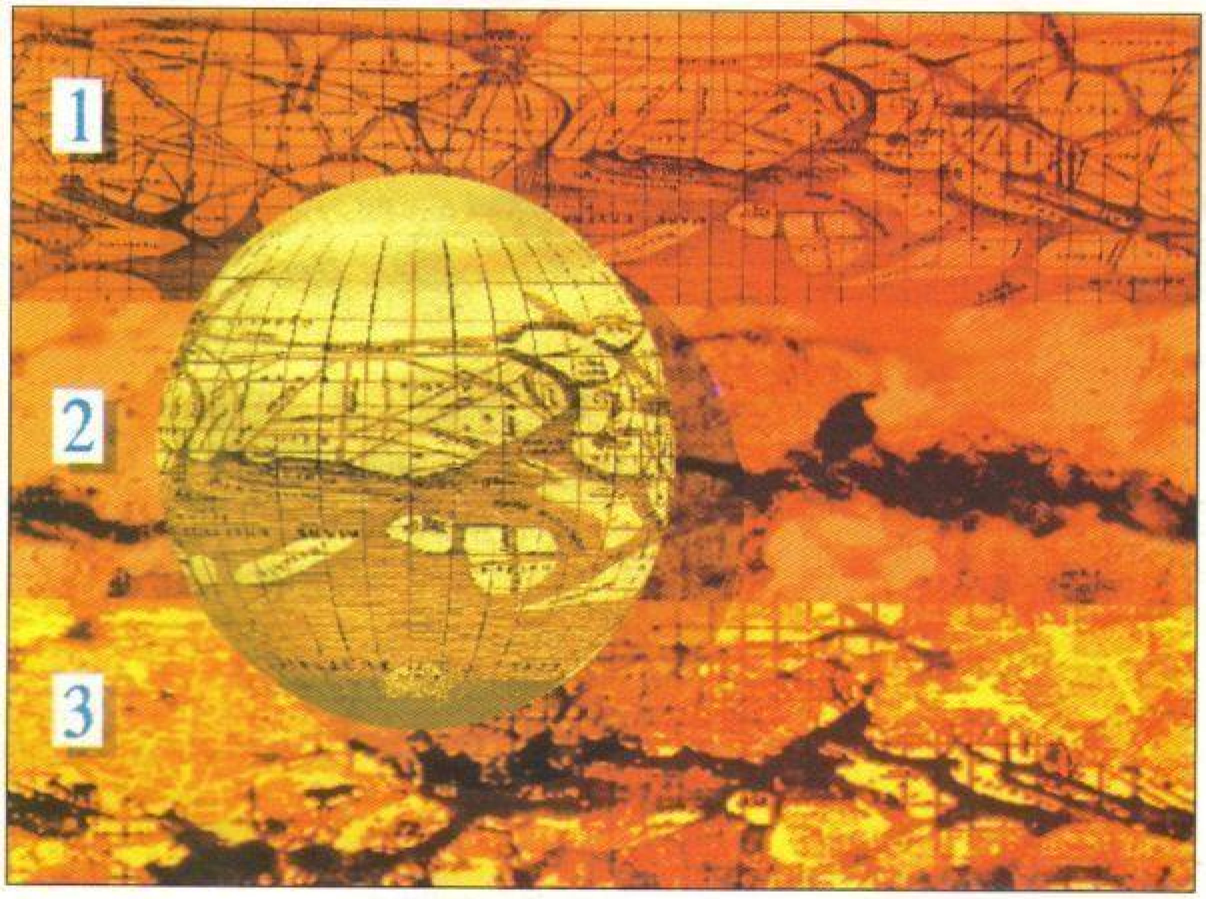
as a reference while I painted.

FURTHER EXPERIMENTS

The work with historical Mars maps got me thinking about perceptions of Mars over the years. I decided to analyze several maps for consistencies of perceived albedo features. The first task was to distort a group of maps to the same dimensions and orientation. ADPro has an excellent interface for cropping and scaling, but you can get workable results from any paint program. I had to crop all maps to 60 degrees, the greatest common north/south dimension among the group. I then used DPaint to cut and reassemble each map, aligning them to the zero/zero coordinate near Sinus Meridiani.

For my first comparison of map features, I simply loaded each one to a different frame of an animation and then played them at high speed. Areas of consistency were apparent in the rapid display. My next experiment was to merge two maps at 50% transparency. I used ADPro's Composite options, greatly enhanced in version 2.5, but the same experiment can be performed in any paint program that allows image merging with controlled transparency. In the resulting image, areas that are either light in both images or dark in both images remain light and dark. Areas that are light on one map but dark on the other, however, average each other out and become a neutral tone in the new image. This makes it easy to see where the perceptions of different observers were consistent and where they differed. It may also offer some insight into the changes in albedo features over time.

Going further in map comparisons, you could use ImageFX (GVP), ADPro, or Imagemaster (Black Belt) to process each map image before combining them. One observer might use darker tones in his or her drawings than would another. Image processors can adjust the Dynamic Range, Contrast, Gamma, and Histograms of images to bring them subjectively closer to a consistent base of values. In the same programs, images can then be combined with new rules, such as addition or subtraction of color values. This can reveal new information. You can approximate these results in paint programs by using Lighten or Darken or Shade modes to adjust overall value. Creative use of color stenciling during a merge can also produce interesting results.



A map of Mars drawn in 1877 (#1) is compared with a modern Mars map (#2) for consistencies of features. Map #3 is the result. The comparison can be made in paint programs, image-processing software, or, as in the illustration, by user-written utilities. The top map is also shown distorted as a spinning planet (overlay) using DPaint tools.

I wrote a quick utility to compare two maps pixel by pixel. The program weighed the difference in value of each pixel pair and then created a new image. If the difference was slight, it averaged the value for the new pixel. If the difference was great, it substituted a very bright value. The illustration shows the result of that process. Image #1 is Schiaparelli's 1877 map. Image #2 is from a USGS map. Image #3 is the comparative map produced by my analytic routine. I used Director2 (Right Answers Group), which is no longer available, but Basic or any good authoring software would work.

Continuing the Amiga Mars exploration, you can generate landscapes and animations using VistaPro (Virtual Reality Labs) or Scenery Animator (Natural Graphics). This is an exciting option, seeing regions of the planet from vantages otherwise inaccessible. On the scientific side, an Amiga explorer can adjust the vertical exaggeration of the data to see the computer landscapes without distortion. Every computer-generated Mars flyover you have seen on TV has been stretched vertically for effect. You can take the law into your own hands and see a different Mars reality if you so choose.

I have worked with many educators eager to make use of computer graphics in the classroom but at a loss for good projects. Perhaps this column will suggest a line of thinking in which general-purpose graphics software can be used as tools of investigation and exploration. ■

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Video in Focus

PRACTICAL ADVICE FOR AMIGA VIDEO PRODUCERS

By Paulo de Andrade

About this "new" nonlinear editing. . .

Nonlinear editing. Suddenly, everyone wants in on this new technology.

But, is it really new? No! It's actually the oldest form of motion-picture editing, born when early filmmakers discovered they could enhance storytelling by rearranging sequences. Editing film involves cutting it into strips and then splicing sequences together. The process is nonlinear; the editor has the freedom to add or remove frames anywhere—even a single frame in the middle of the reel. While painstaking, this allows for very fine-tuned edits.

When videotape was invented, physical editing became a problem. Because of the electronic properties of television signals, cutting and splicing video often resulted in image glitches. The best editors perfected this technique, but still, intricate editing was impractical. And unlike older VTRs, newer decks employed helical scanning heads easily damaged by splices.

Copying sequences to another tape became the preferred way to edit video. Unlike splicing, copying is a linear process: Adding a frame to the middle of an edited tape requires that all subsequent edits be redone. Computer-controlled linear editing enables you to store all edits in a list, however, and with the right setup, you can add that frame and have the controller automatically redo the rest.

A Vision For Desktop

As a network TV editor when I bought my first Amiga, I recognized how easy it would be to edit programs entirely within computers—once the proper levels of RAM, storage, and speed became available. In 1991, I saw my prediction realized in a practical manner. Quantel, a technology leader in television equipment, introduced the Flash Harry—a dedicated non-linear system that took digital video directly from a D1 digital VTR and allowed you to quickly assemble a video by cutting and pasting virtual filmstrips. Then, the program was recorded back to the D1 VTR in real time at hi-res broadcast quality. The Harry came with a full-blown Quantel Paintbox for graphics and titles, a high-end effects generator, multiple digital-audio tracks, and more. The unit was not only physically huge, with high-speed processors and storage devices, but it had a price to match—about $750,000 including the D1 VTR.

All good things eventually come to the desktop, of course, and nonlinear editing is no exception. We have already begun to see this, with Digital Micronics' Digital BroadCaster and MediaCaster, and NewTek's announcement of the Video Flyer (plus systems on other platforms). I expect in the next couple of years or so that desktop systems will offer most (if not all), of the Quantel's features for a reasonable price.

How Nonlinear?

Because it makes all video segments accessible almost instantly, a well-designed nonlinear system can save a lot of time searching. The ease of rearranging segments also makes experimentation easier (although this won't save time for those who cannot control the urge to try every possibility!). On a linear editing system, you can see several previews without having to record, but even with complex computer-based editors, a large sequence of continuous previews may be impossible unless you have several source machines (your target images may be scattered widely on one source tape).

Still in its infancy, desktop nonlinear editing does have drawbacks. Two of them—storage and compression—relate to the large size of broadcast-quality video files.

If you are handling two projects at a time, tight storage space might force you to back up all data from the first and then digitize the data for the second before you can start editing. And, in editing a program with hours of source material, you must first select which images to store in the computer.

Also, because you can ordinarily store only a few minutes of broadcast-quality video on disk, manufacturers have developed several compression techniques. Digital Micronics boards use Motion JPEG and MPEG, for instance, while NewTek's Flyer will use a new proprietary scheme. Unfortunately, compression always causes some form of image degradation, and the highest levels of compression can render images useless.

Developers are working to overcome today's limitations, but the present systems (mostly on other platforms) leave a little to be desired, at least for high-end broadcast use. Many that claim broadcast quality don't match the level of Betacam SP or MII. Also, several don't have all the components necessary to replace a traditional edit suite. Marginal character and effects generators, poor paint systems, and inferior audio capabilities impose limitations. Worse yet, many systems were designed without input from video professionals.

This does *not* mean current nonlinear systems are no good. If you seldom or never produce for television, today's nonlinear systems may provide the performance and quality you need. Even if you do produce for TV, you may want to use the versatility and speed of nonlinear to off-line your programs and take the resulting edit list to a high-end linear system for final assembly.

The wait for Amiga nonlinear editing appears to be worthwhile. NewTek's Flyer and products like it may provide us with the most affordable nonlinear system on any platform. Nonlinear fans will soon have several choices. Right now, options abound for linear editing (see "The Fundamental Things Still Apply," p. 20, June '94), and some of the current systems, including the popular AmiLink, promise nonlinear compatibility. What's old is new. . . again. ■

Paulo de Andrade is president of Digital Reality, an Amiga-based broadcast-video and 3-D animation company in Seattle.

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From p. 13.

modate the myriad ways that synth manufacturers identify the order of their programs. The Sounds window serves a similar function for the Amiga's internal sounds.

MAYBE NEXT TIME

Sequel could use a bit of fine-tuning. The lack of menus takes a bit of getting used to, as do the custom file requesters. A pop-up help screen would make it easier to master the many useful keyboard equivalents.

Also, if you use a hi-res, interlaced screen, the print and controls are minuscule—a custom-screen option would help here. Tempo changes between patterns are not always recognized in a song, and sometimes tracks get out of sync at the start of a new pattern. Finally, a lack of example files hinders the learning process, which is steep. This means you'll need the manual, which is thorough, if a tad disjointed. For instance, the Quick Start section leads you on a page-flipping journey for illustrations and descriptions.

These quibbles aside, Sequel is a solid performer with the mark of extensive field-testing. I often found that the designers had addressed multiple issues in efficient ways. Once you see the method to their madness, you'll fly through your sequencing tasks. While it lacks the bells and whistles of Blue Ribbon's Bars&Pipes Pro, Sequel offers a surprising number of sophisticated and complementary features that boost it above entry-level sequencers. Its forward-thinking yet comprehensive approach makes it ideal for beginner through mid-level sequencing needs.

—Rick Manasa

SEQUENCER ONE/ SEQUENCER ONE PLUS

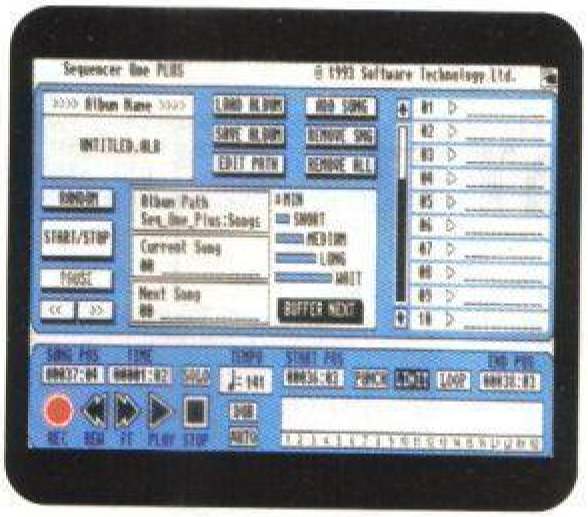
***Oregon Research,* $39.95/$99.95;**

optional instructional videotape $39.95

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 2MB.**
***Recommended system:* 4MB, AGA Amiga, hard drive.**

Entry-level music sequencers.

Sequencer One and Sequencer One Plus are UK-import MIDI sequencers and sample players that provide powerful recording and editing features. Both have four-channel, 8-bit sample playback using the Amiga's internal voices in addition to 32 tracks of MIDI data. You'll find real-time and step-entry support, importing and exporting of MIDI files, external syncing, and an intuitive graphical interface.



Sequencer One Plus makes Amiga and MIDI notes easy to maniplulate.

FEATURES LIST

Both Sequencer One and One Plus use the tried-and-true tape-deck analogy for the program interface. A thorough and well-written manual, complete with index and illustrations, accompanies each product.

All basic recording is done in the track-list screen, which is identical in both programs, except that Sequencer One Plus has buttons for soloing and punching in and out of tracks. A Step editor screen provides a piano-roll graphical interface for editing and step entry, reminiscent of the editing screens Dr. T's software employs. The Bar editor, similar to the old Master Tracks Pro (Passport) song-editor window, lets you shuffle bars and sections of music around for fast arranging and duplicating of repetitive sections.

While neither program creates samples, both let you mix IFF samples with MIDI instruments in your compositions. To play a sample on a particular track, type L, R, or LR into the MIDI-channel column and select a patch number from the sample-palette list.

You edit music in one of two ways in Sequencer One. When you're in the Step editor, clicking on the Info icon opens a text window that lets you select parameters, including the note velocity, length, pitch, and start time. The Bar editor lets you select blocks for cutting and pasting throughout the song. Once you copy or cut a set of bars to the clipboard, you can merge it with or overwrite data in an existing track. The Tidy Blocks feature prevents portions of the note information from being lost when you're cutting and pasting.

ONE PLUS EXCLUSIVES

Sequencer One Plus provides the additional features of Diamond Drag editing, the Tempo Map, and the Juke Box screen. The Diamond Drag graphical interface is an appealing alternative to the Info editor. When it is selected, each note sprouts a diamond on the compass point that corresponds to one of the four parameters accessible in the Info icon method. Just grab and drag a diamond to change the note's pitch, length, start time, or velocity. This feature is so intuitive and easy to use that you'll wonder how you ever got along without it. A blue square gives you access to a submenu that lets you resize and copy the note, snap it to the grid, change the grid size, delete the note altogether, or change it to a control or program-change message.

The Tempo Map allows you to change the tempo of your piece at any given point in discrete steps. The Juke Box loads up to 32 songs and plays them randomly or in a user-defined order, with whatever delay you choose between songs. There is always some delay, however, even with Minimum selected, so you can't use the Juke Box to link different sections of the same piece of music.

Many of the features of Sequencer One Plus exceeded my expectations for an entry- to mid-level sequencer. The range of control offered by the track operations is extensive. For example, the Quantize feature lets you select the quantizing interval, and determine whether you move the note itself or just its starting and stopping points. You can transpose notes, change all occurrences of one note to another, and scale or shift velocities and lengths of notes. Extensive MIDI-filtering options are also available, as is Sys Ex recording, internal or external synchronization options, and so on. The practical features and ease of use of Sequencer One Plus enable it to hold its own against any of the upscale sequencers.

WHERE'S THE SMUS?

Both packages seem aimed at the beginner and semi-pro, which is the same market that Deluxe Music 2.0 is after. SMUS support, now missing, would make Sequencer One and Deluxe Music a dynamite combination for the neophyte interested in composing and scoring computer music. I would also like to see an option for an interlaced screen or a virtual screen to provide ready access to all tracks at once.

Sequencer One Plus, in particular, would make a great addition to any MIDI musician's bag of tricks. The Diamond Drag system provides one of the easiest editing interfaces I've ever seen—one that other sequencer designers would do well to emulate.

Both programs get the ideas down simply and save them in MIDI format for importing into a more powerful package, such as Bars&Pipes Professional or Dr. T's KCS, for further editing. All in all, both represent good value, and I highly recommend them for their intended audiences.

—Rick Manasa

SPARKS

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Accelerator compatible.
***Minimum system:* Video Toaster/LightWave 3.0 or 3.1.**
***Recommended system:* Same as minimum.**

LightWave 3.0/3.1 animation utility.

Imagine a fabulous 3-D animation chock full of shooting stars, showers of confetti, and swarms of killer bees. Now imagine the headaches you'd suffer trying to create that kind of animation with the NewTek Video Toaster's LightWave 3D program. After loading dozens of copies of each object, one at a time, you'd have to move each one into position and set an initial keyframe. Finally, you'd have to create a separate motion path for each object.

If you're immediately discouraged by the prospect of creating such an animation manually, you'll be thrilled to hear about the advent of Sparks, a LightWave utility that takes the drudgery out of the process. A particle-animation program, Sparks lets you move whole groups of objects around at once, applying to them forces such as gravity, air drag, and wind. You'll have newfound abilities to create explosions, snow, leaf storms, and (you guessed it) showers of sparks.

AN OBJECT IN MOTION . . .

The simplest function that Sparks performs is manipulating particle objects—special objects you create in the LightWave Modeler. Instead of connecting the points in the objects to form larger polygons, you convert each point to a one-point polygon. LightWave always renders this kind of polygon as a single, colored pixel. By moving the points in the object around, Sparks controls the movements of the particles.

The program allows you to set the beginning position of all of the points to the same coordinate, or to place them at the vertices of any LightWave object. From this initial point, you can move them in a set pattern (anything from a spherical explosion to a tight spray in a single direction), target each particle individually by using the points in a second object to describe their paths, or have them follow the path specified by a LightWave object-motion file.

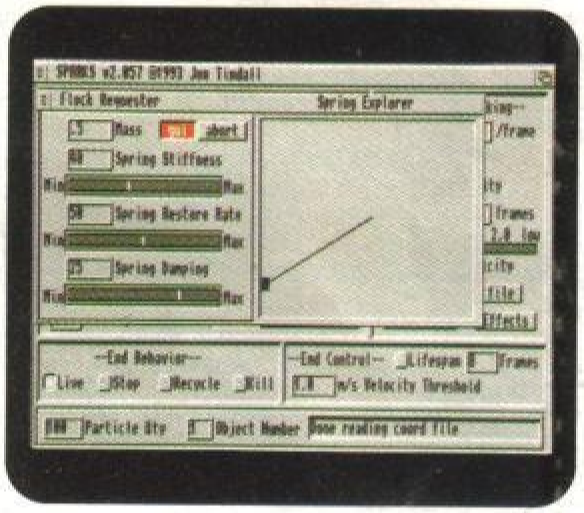
Once in motion, these particles can be influenced by gravity, air drag, wind (steady breezes, puffs, or swirls), as well as movable "gravity wells"—areas that either attract or repel them strongly. Flocking controls allow you to force particles to rejoin the group if they've been nudged away. You can make the particles bounce if they hit the ground, or fade out after a number of frames. You can launch all of the particles at once, have them appear a few at a time, or specify the frames in which to launch them.

Animating particle objects provides interesting effects, but moving dots around has its creative limits. To address this, Sparks lets you replace each particle object with a normal LightWave object, changing a shower of sparks, for example, into a shower of glittering gold stars. You can also add attributes such as motion blur, rotation, and displacement mapping. The catch is that when you substitute objects for particles, Sparks must create a LightWave scene file that contains a keyframe for each object at every frame. This consumes a lot of time and memory, but affords you the luxury to sit back and watch.

. . . TENDS TO STAY IN MOTION

Moving lots of objects in exactly the same way results in unnatural, mechanical-looking motion, so Sparks provides several controls to counter this. For instance, you can specify a variation of velocity so that the particles move at slightly different speeds, or you can set a bounce probability so that only a certain percentage of the particles bounce. In short, you can set your objects to move in mechanical lock-step or with fluid, organic-looking motion that makes them appear to have a life of their own.

In addition to all of the tools for creating LightWave scenes, Sparks includes a number of macros for use with the Modeler program. These let you capture the coordinates of an object's vertices and save them as a position file; take a LightWave motion path and create a keyframe at every frame, making the motion file suitable for use as a Sparks object path; slice an object into small polygons, suitable for flexing with bones, and so on. Of special interest is the Breakup macro, which subdivides an object into smaller objects. When you keep them in the original position, these pieces look like any normal, whole object, but when you move them with Sparks, the object explodes, or crumbles, or reassembles itself, depending on the motion scheme you create.



Sparks' interface provides new controls for LightWave.

For an additional $25, Sparks owners can purchase a pair of utility programs from MacroSystemUS. The Lightning Bug program attaches a light to every particle in your scene, allowing you to

Continued on p. 56.

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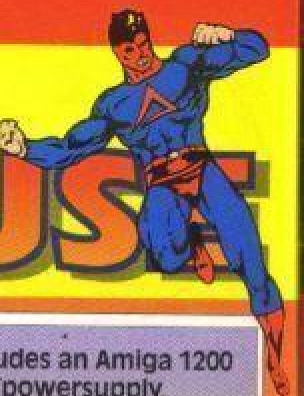

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Package includes an Amiga 1200 computer w/powersupply, mouse and TV adapter plus these great software titles: Pinball Dreams arcade pinball simulation, Trolls AGA, and Quick Write word processor.

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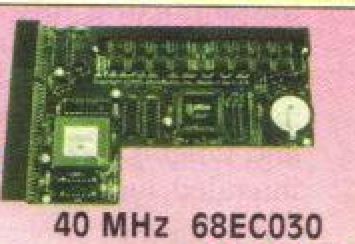

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50 MHz 68030 w/MMU		40 MHz 68EC030	
50/0/0	$379	40/0/0	$299
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Other configurations available

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MATH CHIP 32-BIT WIDE RAM And REAL TIME CLOCK FOR THE NEW AMIGA 1200

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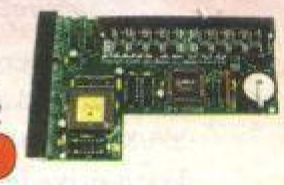

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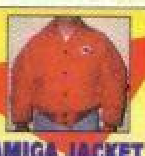

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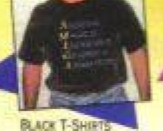
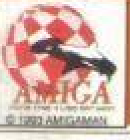


BLACK T-SHIRTS HEAVYWEIGHT DESIGN ON FRONT AMIGA LOGO ON BACK SIZES: M,XL $11

RED T-SHIRTS HEAVYWEIGHT DESIGN ON FRONT AMIGA LOGO ON BACK SIZES: M,XL $11



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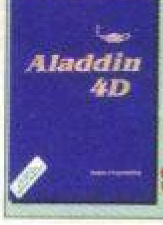

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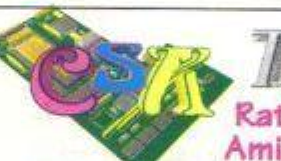

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Rated #1 in Amiga World

The only ALL IN ONE single board Solution for the Amiga 1200 that provides superior ACCELERATION NETWORKING SCSI Controller

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16-Bit, 32 Voice. Fully digital stereo audio. 4MB soundfile ROM, E-Mu G1.5 proprietary DSP, 20 hz to 20kHz frequency response. 2 stereo outputs at =4dBM into 600 Ohms. Integrated MIDI interface.

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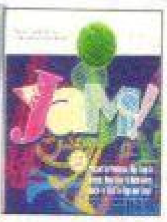

Create accompaniments, soundtracks, styles & grooves quickly & easily. Stereo TurboSounds, 2 octave chords, visual volume & panning.

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Improved notation display & editing, revised look/feel, groove quantitize, drum mapping, sequence trigger, Toaster control, much more.

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Power Tools Kit........................$34
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Dual 3.5" dynamic drivers & built-in stereo equalizer for accurate stereo reproduction. $49

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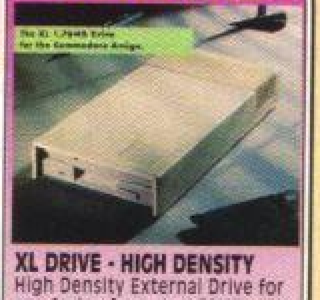

XL DRIVE - HIGH DENSITY

High Density External Drive for any Amiga formats 1.76MB with standard DD Disks compatible for PC Disks requires Work Bench 2.1 or above

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Internal for A2000/A4000 .... $165

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TEXEL 3028 internal $399

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Reviewed in Dec. issue of Amazing Computing

MORE COLORFUL
- High-resolution thermal transfer color printing.
- Primera's color is brighter, richer, sharper and more vibrant than other color printing technologies.

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- Prints up to four times faster than ink jet.
- Requires no drying time, unlike ink jet. Eliminates wrinkling and smearing.
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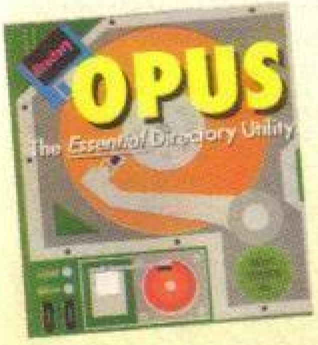
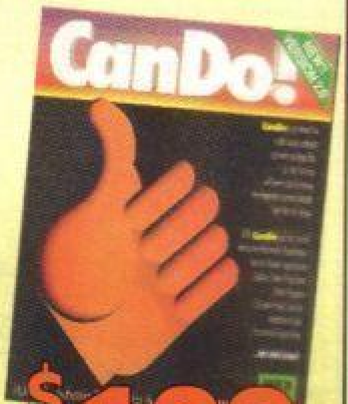


OPUS $59

Realize your full productivity with Directory OPUS! OPUS allows you to easily manipulate data files; display images; play sounds, ANIMS, BANIMS, and MODS; and launch programs from its powerful, yet easy to use interface. A "must-have" for hard drive owners. Use OPUS once, and you'll never want to be without it! *(It's the best-selling software utility on the Amiga!)*

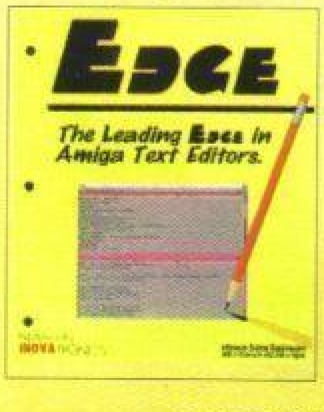
CanDo!



$109

The CanDo software authoring package allows you to take advantage of the Amiga's powerful architecture, regardless of your technical abilities. You can program anything from a simple presentation to the most advanced professional application program in record time. In short, CanDo takes the guesswork and drudgery out of programming and lets the creative genius in you run wild.

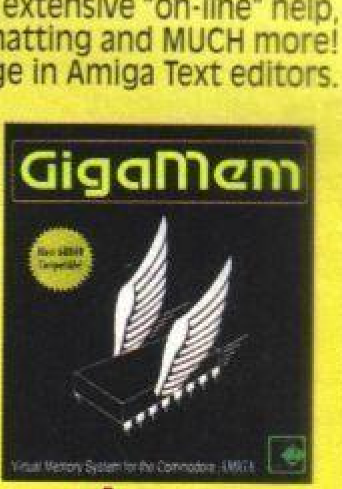
CanDo's scope and performance makes it a must for training, simulation and other applications.



New EDGE $59

Edge is an easy-to-use, professional-quality text editor ideally suited for notes, scripting and any other forms of text manipulation. Features include: unlimited number of files, unlimited number of windows/file, infinitely configurable user interface, fast search & replace, full AREXX support with macro recording, AREXX controllability, multi-level undo, extensive "on-line" help, comprehensive paragraph formatting and MUCH more! The Leading Edge in Amiga Text editors.

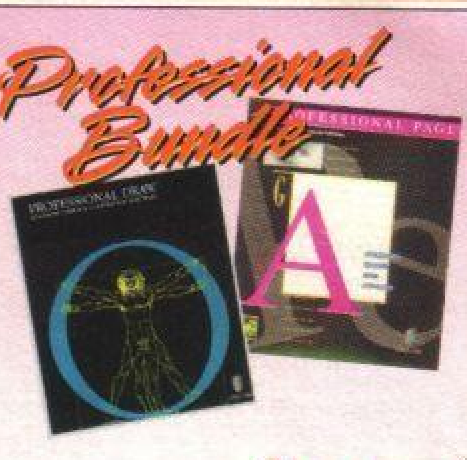
GIGAMEM



GigaMem virtual memory system lets your Amiga utilize unused hard drive space as RAM, eliminating the need for additional hardware! With Gigamem you can run memory-hungry programs (such as Art Department, LightWave, CanDo and PageStream) without running low on memory.

$89

Requires an 020/030/040 based Amiga with MMU and OS version 2.1 or higher.



Professional Bundle

PROFESSIONAL PAGE 4.0

Automatic Genie functions automate most routine page layout and DTP tasks. Page Genies automatically create custom page layouts Function Genies provide new ease of use and user customization of program. New features include: undo button, irregular text wrap, enhanced color separation and under color removal algorithms, auto-tiling for output of larger pages.

PROFESSIONAL DRAW 3.0

An object-oriented color graphic design and illustration tool, now has dynamic hot link to Pro Page 3.0, and more than 30 automatic function and tool Genies for fast, effortless creation of professional-quality artwork. Over 275 ARexx commands allow user to edit or create Genies. Text and color handling, enhanced color separation, auto-tiling, undo, redo. Includes 145-piece clip art collection and utility allowing structured drawing clips to be converted to IFF bitmaps.

both for a low price of... $154

ANNOUNCING

Distant Suns 5.0

NEW FEATURES:
- 3-D planet rendering-experience 3-D planetary motion!
- View images in 256 colors (8 bit AGA)
- 8,000 sample stars from the Hubble Guide Star Catalog (16 million stars) More Hubble data available seperately.
- Intuitive tool pallette
- Greater selection of AREXX commands

Hardware Requirements:
AmigaDos 2.0 or greater,
2MB RAM, and Hard drive

$56

New CALIGARI BROADCAST

Up to 8000 x 8000 pixel resolution. Direct support for single frame controllers. 3D Studio and Wavefront file compatible. Animatable, Deformations. IFF 24 output, and much more.

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CALIGARI 24

Modeler, renderer, and animator employing virtual reality technology. Full object editing functions including point edit, real-time feedback using a virtual reality inter-face, fast rendering of photorealistic images, AGA, IFF support for textures and output.

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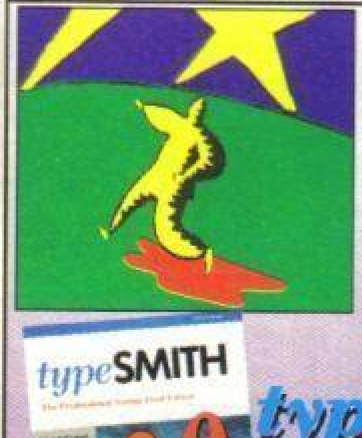

PageStream3.0. $224

The Ultimate desktop publishing program! PagesStream3 provides the professional typesetting and graphic tools you need. It has a feature-paced toolbox to create any type of shape, which you can color with PANTONE® colors and gradient fills. Import and export text and graphics in many formats, and see pictures in full color on screen. AGA compatible! Automatic Flash macros automate most page layout tasks and create custom page designs. Create your own macros with recordable ARexx! Load ProPage documents and edit ProDraw drawings. Unlimited Undo and Redo, extensive online help, autosave, dot leaders, index generation and more! Package includes BME 2 image processor, PageLiner 2 text processor, 50 fonts and 100 graphics!

typeSMITH v 2.0 $124

Create bitmap and outline fonts for all your programs! Convert between PostScript, Compugraphic and Soft-Logik formats. Autotrace bitmaps and generate bitmaps from outline fonts. Automate font creation with ARexx. Copy and paste characters between fonts, and add professional hinting to your fonts. *Compute, Amazing, Amiga Format and AmigaNews* all called TypeSmith a must-have program. Voted best DTP utility by *Amazing's* readers.

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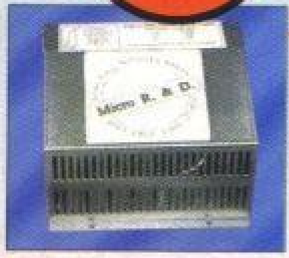

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300 Watts. Super Heavy Duty, Great for Video Workstations.
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A-1200 RAM Expansion
Holds Up to 8MEGS, Includes Co-Processor Socket and Battery Backed Clock/Calendar.
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Multi-Platform Graphics Conversion and Processing Software. Very Easy to Use. Built-in Batch Processing. Supports IFF, PCX, BMP, JPEG etc. **$39**

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Megalosound is an amazingly low cost, full featured, 8 Bit Stereo sound sampler. But that's not all! It also features Direct-to-Disk Recording of samples. Up to 56kHz sample rate.
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Clarity 16 Here is the Low-Cost, 16 Bit Stereo Sampler you have been waiting for! Record samples up to 44.1kHz, cut and paste between multiple samples, MIDI functions, Sample sequencer, MORE!
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Sequencer One/Sequ. One+ Entry level & Mid-level sequencer systems. Play back samples at the same time as 16 channels of MIDI. 32 tracks, Sequencer One Plus includes easy to use Diamond Drag editing.
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WARP ENGINE
The Only Expansion Device you need for your Amiga 4000 (or Amiga 3000) that provides High-Speed 040 Acceleration, up to 128 MegaBytes of Local 040 Burst Memory and the fastest SCSI-II Controller Available! Why? Because all of this expansion is on a single board that installs into the CPU slot- Not a Zorro III slot!

FEATURES	WarpEngine	GVP 040/40	FastLane
28MHz, 33MHz, 40MHZ versions	YES	NO	NO
28MHZ Upgradable to 33 and 40MHz	YES	NO	NO
Expandable Onboard to 128MegaBytes Ram	YES	NO	YES
Built in SCSI-2 Hard Drive Controller	YES	NO	YES
Uses Industry Standard SIMM Modules	YES	NO	NO
Uses any Combination of SIMMS	YES	NO	NO
Allows use of the Memory from the Amiga	YES	NO	NO

28 MHz.... **$839** 33MHz.... **$1299** 44 MHz.... **$1579**

RETINA
24Bit Frame Buffer and Workbench Emulation. Analog RGB output. 800x600 Full 24Bit 16.7 million color display. Non-interlaced Full Workbench Emulation with resolution such as 1024x768 or 1280x1024 in 16 colors or even more! Up to 2400x1200! Paint program comes with Retina. The Retina can still be used to display 24Bit graphics while emulating Workbench. Requires the 2.0 or greater operating system.

W/2MB.... **$345**
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TV Paint... $219
With RETINA.....$200

TOCCATA
The Toccatta is a full 16Bit audio digitizer with 3 Stereo inputs, digitize at up to 48 Hz in 16Bit and 8Bit direct to harddisk. Playback from HardDisk up to 16 channels in 16Bit. 64 Times Overstamping, 16 sampling rates, Freq. Response 10 Hz to 20 KHz. Simultaneous Record & Playback from HardDrive.
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V Lab
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New External for 500, 600, 1200 **$399**

- 24 Bit RealTime Video
- Digitizer AGA Support
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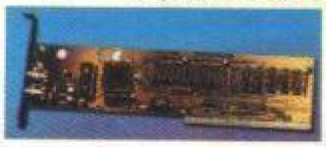

MULTILAYER-ADPro
Requires Art Department Professional or MorphPlus & ARexx -AmigaDos 2.04 or higher. MultiLayer for ADPro is a compositing/layering interface for video professionals & artists using ASDG's ADPro program as a compositing engine. Improves ADPro's impressive array of compositing functions. Control up to 100 Layers.
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SPARKS™
Standard Particle and Real world Kinematic animation System for LightWave3D 3.0
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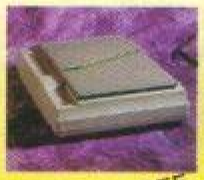

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The MS1200 & MS2400 let you scan 16.7 million colors, 256 true greys, & line art. Perfect for the Toaster & other video, multimedia, & DTP applications.

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- 8.5" x 14" scanning area.
- ColorKit Pro - saves 24-bit IFF/TIFF and more; Scan size limited only by available hard disk space.
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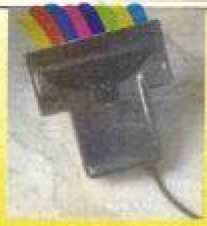
MS1200 **$899**
MS2400 **$1099**



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Three scanners in one! Scan color, true grayscale and monochrome line art. Perfect for video, multimedia, desktop publishing and more.

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- OCR Jr. text recognition - S/W available option

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AVEC TOWER
Generous expansion chassis sits conveniently next to your Amiga computer. Designed to hold up to 8 PC style video cards and 4 to 5 SCSI hard drives, Syquest drives, tape backup units and even CDROM drives. Unit includes SCSI connection and internal and external wiring. Includes SCSI kit.
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IDEAL FOR THE FOLLOWING CARDS:
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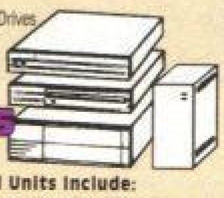
External SCSI HardDrive Cases



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All Units Include:
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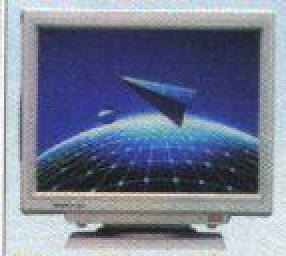

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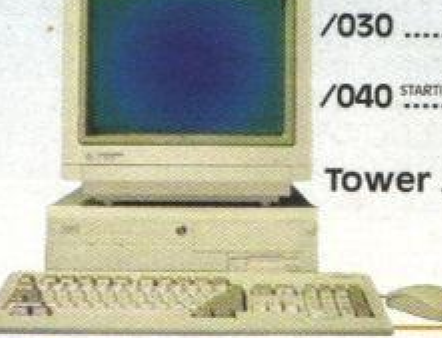

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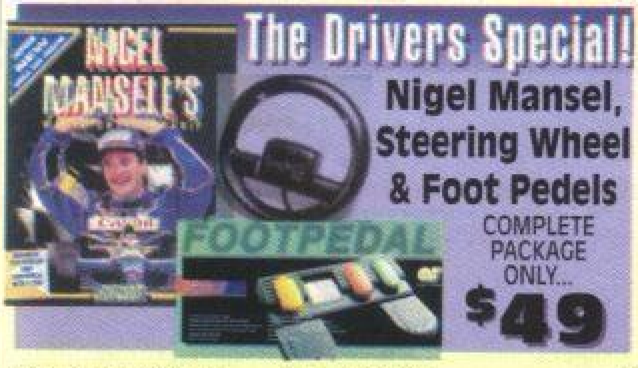

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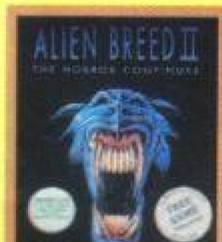

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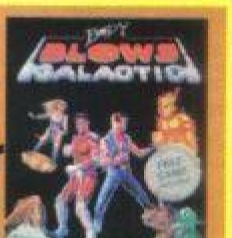

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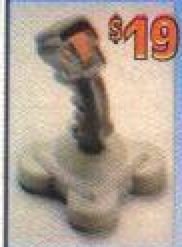

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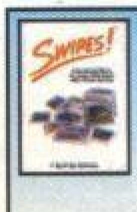

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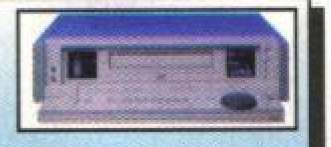

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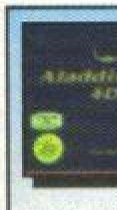

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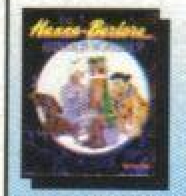

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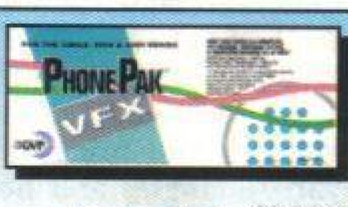

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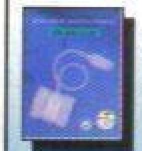

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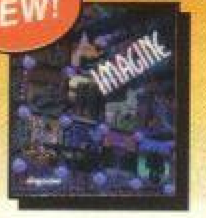

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From p. 49.

add lens flare to your swarm of objects. The MultiReplace program enables you to automatically replace every instance of an object, which can be mighty handy when you've got a hundred stars and want to replace them with a hundred ducks.

COMPLEX MOVES

Sparks' power notwithstanding, it's not particularly easy to use. With an interface consisting of a gray wall of buttons, the first-time user is clueless as to the program's functions, and the brief manual makes the erroneous assumption that all users are animation experts.

At least part of Sparks' problem, however, is due to the complex nature of 3-D animation. Author Jon Tindall may have figured that anybody proficient enough with LightWave to need Sparks would have a pretty good idea of how to use it. Although not a LightWave expert myself, I found that once I had worked through the tutorials in the manual and absorbed the basic concepts, I had no trouble understanding how to use the program.

Many LightWave users are surely willing to endure a brief struggle to get control of the tremendous power that Sparks offers. If you want to move large numbers of objects in LightWave and have their motion look fluid and natural, Sparks is currently the only way to go. Once you have mastered its many tools, your only problem will be finding enough hours in the day to try them all out.

—Sheldon Leemon

WAVEMAKER

Axiom Software, $249.95

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2.0/3.0 compatible.

Hard-drive installable.

Not copy protected.

Accelerator compatible.

***Minimum system:* Video Toaster/ LightWave, ARexx.**

***Recommended system:* 2MB chip RAM.**

LightWave animation utility.

Wavemaker is an attractive alternative to the drudgery and struggles commonly associated with using LightWave in the Video Toaster to create and render logo animations. The program lets you make choices about the animation, and it generates a script that creates a scene file for LightWave.

LOGOS IN FLIGHT

To create a flying logo, you either select an object to serve as a logo in LightWave Modeler or use an image converted to LightWave's object format with a third-party conversion program. After you select the logo you want, Wavemaker can automatically resize it, for the logo needs to fit within defined parameters.

There are three distinct parts to a Wavemaker-generated animation: On, Off, and Hold Position. You choose each one from a set of preset moves or positions represented by a variety of buttons. On and Off move the logo in or out of the scene in a variety of defined motions and directions. As its name implies, the Hold Position brings the logo to rest at various angles and positions. All the moves take advantage of ease-in/ease-out adjustments so as to achieve a smooth and natural motion.

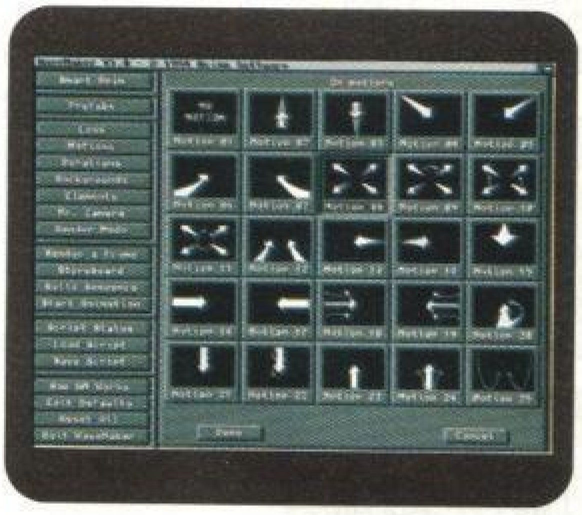
Whether you edit the durations of the moves or the whole animation, the overall script is updated in the process. This allows you to change one part of the animation without recalculating other segments.

Wavemaker also controls elements other than the logo's motion. Backgrounds for the animations can include a choice of gradients, a solid color, an image, or a sequence of images, and you can adjust the camera view and choose rendering options. While all this is not extremely difficult to achieve within LightWave, having the choices governed and limited by Wavemaker makes it easier for the LightWave neophyte to control an animation.

PUBLIC WORKS

Elements represent a unique and useful feature of Wavemaker. They are a collection of preset object animations that you can set in motion behind the logo. You'll find 48 different background elements, including Lines, Circles, Streaks, Swirls and many others. An animation can contain up to eight layers of elements, and the majority have user-controlled parameters, including options such as direction, speed, color, and direction of rotation.

Wavemaker also offers the ability to create storyboards. A storyboard is an RGB or Framestore image with a number of panels showing different frames of the animation. You can choose the beginning and ending frames, along with the option of showing either 9 or 16 intervening frames. This gives you a rough overview of your animation before you render it, and it's a good way to show clients a sample of the finished product.



Set your logos in motion with Axiom's Wavemaker.

Also included is an Animation Sequencer, which allows the program to tell LightWave to render up to 15 animations in sequence. You can save the images of each scene in a specific directory, if desired. This is a very useful feature, as it streamlines the set-up and rendering legwork required to produce multiple animations.

ODDS AND ENDS

A short, indexed manual with a brief but helpful tutorial accompanies Wavemaker. The package also includes a videotape that shows all of the different moves and elements available. While it's not exciting to watch, it can give clients an idea of Wavemaker's animation capabilities.

It should be noted that if you're using LightWave 3.0 or later, you'll need 2MB of chip RAM to take advantage of Wavemaker's potential. While you can run the program and create the animation scripts with less memory, it is then necessary to exit Wavemaker to run LightWave. In addition, it's impossible to take advantage of some of the features (such as the storyboard) if both programs cannot run simultaneously. A chip RAM upgrade may also be necessary for those running LightWave on older systems.

All in all, Wavemaker is a very easy and useful program for creating flying-logo animations if you don't want to invest the time and effort needed to master LightWave.

—Dave Thomas ►

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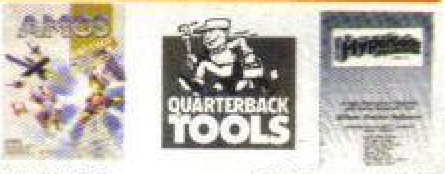

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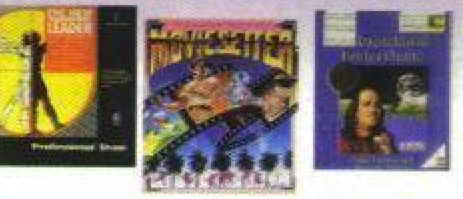

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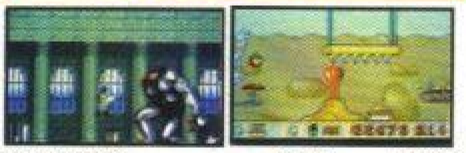

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Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB.**
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Music training software.

OCTAMED PROFESSIONAL 5

DevWare, $69.95

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB.**
***Recommended system:* 2MB, hard drive.**

Music composition software.

DevWare has been busy of late converting shareware into commercial software. The results of these efforts are apparent in both Mozart's Music Master and OctaMED Professional 5, two seasoned veterans of the public-domain music scene that are now distributed as commercial packages.

MOZART'S MUSIC MASTER: INTERVAL TRAINING

Mozart's Music Master (MMM) teaches and quizzes basic music harmony by providing ear-training and notation-reading exercises on the intervals of the octave. Contrary to the package blurb, it does not teach theory (except interval relationships) or meter. You will, however, find that the package provides a reference database of musical terms and symbols.

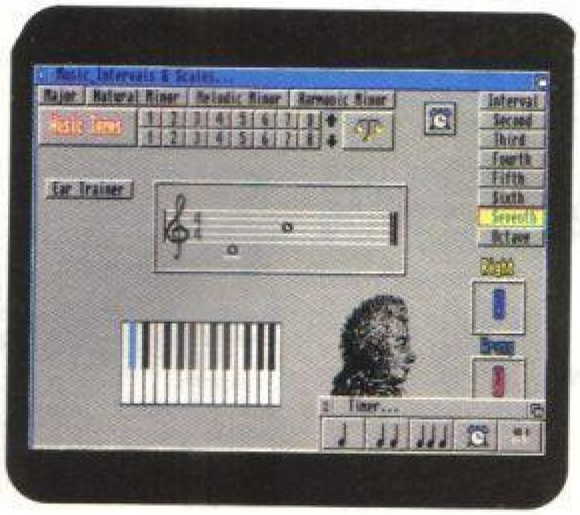
Along with a disk-based AmigaGuide manual, MMM presents two interface screens that test the recognition of intervals, as notated on a musical staff. A third screen is the database of terms and symbols, to which you can add new terms with accompanying definitions. Since this is, after all, instructional software, scores are kept, and the exercises can be timed. Sound samples are played to signify right or wrong answers, as well as for interval ear training.

The interface, while simple, is not consistent or logical from screen to screen. Although the program serves as a simple practice and test exercise, both it and the disk-based manual fall short of teaching the underlying significance of intervals and musical notation, so prior knowledge is required. Furthermore, the intervals taught don't extend beyond one octave, there are no voicing (note-order) variations, and no chords are presented. In my opinion, Mozart's Music Master needs significant improvement to justify its price.

OCTAMED PROFESSIONAL 5: MODULAR DESIGN

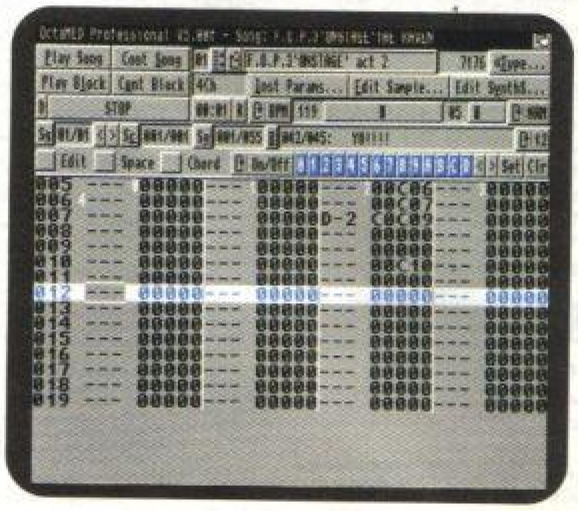
OctaMED, the long-time PD favorite, fares better with its newfound commercial status. Useful for creating songs, or music "modules," OctaMED lets you work with small blocks, or modules, of musical material. These contain all the information necessary for playback: instrument/sound samples, volume, duration, tuning, pitch, and play-order information. You enter notes using the Amiga keyboard, as standard notation on a musical staff, or through direct MIDI input. Although I don't know why anyone would actually do this, you can also enter notes as numerical data.

Playback is output through the Amiga's internal sound chips, MIDI instruments, or both. You can incorporate modules you create into games or presentations, or you can circulate them along with the included freely distributable and fully ARexx-accessible OctaMED Player.



Even a maestro has to begin with the basics . . . and Mozart's Music Master aims to teach them.

The "Octa" in the program's name refers to its ability to play up to eight 8-bit samples at a time (with a maximum of 63 per song), as opposed to the Amiga's standard four. The trade-off is slightly degraded sound quality. Integrated into the program is a full-featured and easy-to-use sample editor, along with a facility for creating and editing "synthetic sounds." These are waveform-based instruments, with a five-octave range (as opposed to sampled sound's three octaves) and economic memory requirements. In both editing windows, you can tune, stretch, affect, and generally massage the sounds into whatever shape you desire.



Compose your tunes with OctaMED Pro 5.

The songs, or modules, are themselves made up of smaller independent blocks containing note and instrument data. Using a play list, you create a song by arranging the blocks in any order you wish, with each block played once or a number of times, thus providing flexibility and memory economy. By varying the tempo and dynamics of each block, it is possible to make smoothly flowing and subtle songs, if that is your wish.

As with MMM, the manual is a disk-based AmigaGuide "help" feature that must be read outside OctaMED. Activated only when I booted from floppy, it proved to be fairly incomplete. Its most redeeming quality is the recommendation that you buy an additional package to obtain a full printed manual and tutorials!

CONCLUSIONS

While Mozart's Music Master might radiate brightly in shareware circles as a resource for learning the fundamentals of music, it's a profound weakling in the commercial arena. On the other hand, OctaMED should appeal to both new users and experienced composers. Musicians familiar with traditional sequencer and composition programs may find OctaMED Pro a tad limited, but it is nonetheless capable of worthy results. ■

—Michael Hanish

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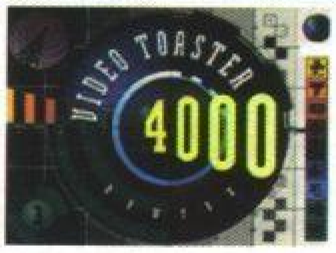

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By Peter Olafson, AW Games Editor

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1.3 ✓
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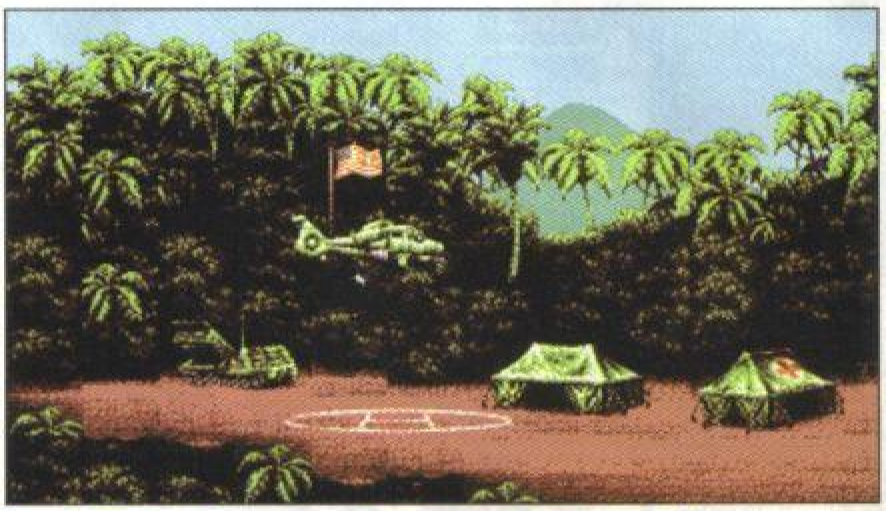
You may have noticed that I don't do many full reviews of arcade games. (They usually get stuck in Short Takes or AGA Games.) It's not that I don't like them—on the contrary, I love 'em—but they tend to be of a type. And frankly, there is only so much one can write about a cartoon character blasting other cartoon characters to kingdom come or hopping between platforms before the reviews start to sound alike.

However, periodically, a number of long-awaited releases will arrive in close formation. That happened again in late winter and early spring, and the best of the bunch are so good that it would be hard not to take notice.

For starters, there's Apocalypse. If you've ever mourned the absence of an Amiga version of Choplifter, you can doff the black veil, start dating again, and run the flag back up to full mast, for this ***Virgin UK*** release (about $35) is a heroic rendition of that 8-bit chestnut.

You fly your Apache helicopter from right to left across an olive-drab jungle, blowing the bejesus out of buildings to permit POWs (and, regrettably, enemy troops) to escape. You lay down suppressing machine-gun fire to knock down the inevitable handheld rocket launchers—the little enemy soldiers die acrobatically in the fashion of Cannon Fodder's—land (softly, softly), wait for the little men to board, and then skedaddle back to base, avoiding the dogs of war (enemy choppers, artillery fire, and undetected enemies). And once you've found and rescued the required numbers of POWs, it's on to the next level. What a great game! The levels are conceived more like missions; there's a theme (and a trick) to solving each of them. The designers have made good use of various special-purpose weapons—rockets and firebombs, for instance—to give the game greater depth (and not simply more ordnance). They've made the scenarios more rational: If you land at the tent, you'll be joined by an evac team that will ferry out wounded soldiers. They've gotten a good use out of 32 colors without sacrificing the hothouse atmosphere or allowing the chopper to get lost against the trees. A superb job by Miracle Games, which inherited the game near its completion. How's Dick Special coming, guys?



Free POWs with an armed Apache helicopter in Apocalypse.

Next up is Second Samurai (***Psygnosis***, about $35)—the sequel to, uh, First Samurai. But first, a word about First Samurai, if I may. It was a Mirrorsoft product that died off not long after its release. This was a side-scrolling beat-'em-up without rival—one of those almost magical instances where sound, art, and gameplay are synthesized into a whole greater than the sum of its parts. There was other-worldliness to the graphics. (Remember the UFO-behind-hill effect in the "Lost in Space" episode set in a parallel "negative" dimension?) The death of enemies was accompanied by orchestral flourishes; grabbing powerups were answered by a heavenly choir; and a mournful song played as your character's soul swirled back to its "last save." It was a strange and wonderful game—the sort you can put your heart into because it seemed to give back a piece of its own.

Ahem. Enough about the original. Author Mev Dinc seems to have answered the inevitable "How do I top this?" question with "bigger and better." Well, that's one answer, anyway, and we get right into the fray in Second Samurai. Boss-type monsters of intermediate size and elaborate special effects are distributed liberally about this landscape. Indeed, it often seems that's all there is—that the game moves only from climax to climax. (The A1200/4000 version—Psygnosis' first disk-based venture into AGA—is likewise very nice, but I had to physically remove my '030 accelerator and extra memory from the A1200's trapdoor to get it to run—a telltale sign of careless coding.)

However, while going over the top here, Dinc has forgotten to allow gamers a chance to breathe between those cli-

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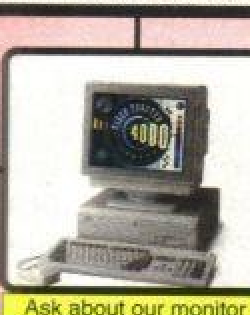

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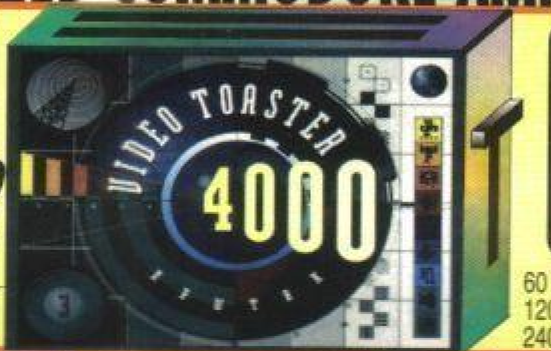

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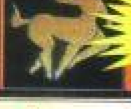

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maxes. And he has, I think, unintentionally made Second Samurai more like other games of its type. Perhaps it was a one-time only sale, but the priceless quality that First Samurai had seems to have simply disappeared. I'll enjoy this new game, which is a technical marvel and very playable, but I'll miss its brother's endearing uniqueness.

Magic is hard to repeat, and sometimes age gets in the way, anyway. Remember Turrican and Turrican 2? You could scarcely forget them. Around the turn of the decade, those two elemental games helped establish the Amiga as the platform for platformers. But in the early '90s, Turrican 3: The Final Fight languished in the vault when German publisher Rainbow Arts fell on hard times, and while there has been occasional chatter about it surfacing, the game never materialized.

It's finally turned up, via the good graces of ***Renegade*** (about $35), and I'm sorry to report that they're a little too late. The concept has just run out of steam. T3 should be familiar to fans of the first two games. It has the hidden powerups and huge level architecture, the out-of-the-way caches, and the in-the-way bosses. The designers also appear to have increased the number of colors again (sometimes almost to the point of muddiness) and added parallax scrolling, and of course the music's still bloody marvelous.

But there's nothing especially fresh about it at this late date —Turrican 3 is Turrican 2 with a George Hamilton tan—and it's a point reinforced only by all the window dressing. It didn't need makeup. It needed a makeover.

I was going to wrap up here with Puggsy—a prehistoric Psygnosis platformer that dates from the same period as Turrican 3—but my copy doesn't work. We will cover it next time . . . in, um, Short Takes.

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WHERE IS THE great Amiga flight sim? We haven't had more than a half-dozen really good ones: F/A-18 Interceptor, F-29 Retaliator, Knights of the Sky, Gunship 2000, Combat Air Patrol, and (if I was a betting man) the imminent TFX.

With almost nine years' worth of games, that's a relatively short list, and a rather troubled one at that. The best Amiga flight sims do a lot of things well, but rarely do them all at once. Consider three recent releases which, while good to great, point to ongoing problems in the genre: the smooth (but inaccessible), the detailed (but slow), and the playable (but old-fashioned).

Fighter Duel Pro 2 (***Jaeger Software***; $59.95, $30 for upgrade) remains a great dedicated airborne fencing match—Dogfight can't touch it—and devotees who sweated out the two earlier incarnations should fall all over themselves to land this one. You're still going up over Spartan terrain—and into a newly gorgeous, dusky sky—to knock heads with either another human player or computer pilots. And it still flies with a light-limbed self-assurance that almost removes the Amiga from the picture, and that will encourage you to look under your chair with an expectation of seeing clouds.

The new features aren't obvious—unless you boot FDP2 on an AGA machine, where it runs in ultra-smooth, flicker-free hi-res—but they're all over the place. A whole squadron of new plane types has been included—including the first jet fighter, Germany's ME-262—for a total of 25. You can go up against four smarter computer pilots flying more colorfully rendered craft. A "chat" mode lets you zap macroed insults and exclamations to a modem opponent. You can fly with a wingman, or not fly at all and just man an anti-aircraft gun. No obvious problems here, though I wish they'd left in Flight Recorder, a motion path generator. What FDP2 does, it does brilliantly.

However, what it does brilliantly is nevertheless not for everybody. Anyone without prior experience in the Fighter Duel line—or who doesn't have the eyes of a hawk—is likely to find Fighter Duel Pro 2 hard to get into.

For instance, taking off can still be an arduous task for a newbie—happily, you can start a duel airborne—and the manual remains a rather stoic and technical affair. The opposing planes appear as white pinpricks. If you happen to look the wrong way, or allow them to drift up into the sun's glare, you could miss them entirely. I often lost track of my would-be opponents, never to find them again (before they found me), and wound up either wheeling in useless circles in search of them or getting shot down without knowing precisely what I'd done wrong.

Of course, the purists will find this authentic—pilots will love it—and, indeed, it is. Since the planes included here date from the World War II era, there's no on-board radar or heads-up display to track enemies.

But it wouldn't hurt to throw in some play aids for the novice. (I mean, if I wanted to learn to really fly, I'd learn to really fly.) I'm not saying give up the realism—that's a major draw—but if they're willing to allow the wingman's craft to blink for easy identification (which doesn't help all that much), how about a novice-level option to throw a box around the nearest enemy? How about an in-flight trainer or tutorial that would usher users gently into the program, and when they crash (and you will crash), show them what they're doing wrong? It may not be authentic, but land-lubbers might then be better able to enjoy it.

I'm half inclined to beg for more ground detail, too—I want to fly over a city at FDP2's incredible frame rate—but that's never been the point of the Fighter Duels. (Your eyes should always be aimed skyward.) If it's detail you crave, check out Tornado (***Digital Integration***, about $40) instead. It is laden with skyscrapers (and smaller buildings of all description), trains, trucks, nuclear power plants, power lines, a whole raft of aircraft ranging from Chinook helicopters to the big AWACS jets and any number of ground units.

And that detail is just a taster. Built around Britain's versatile Panavia Tornado, this is probably the most full-blooded, feature-rich flight sim to reach the Amiga, and as close as we've come to a Falcon 3.0-level product in size and scope. Though modem play's been dropped in this conversion (null-modem play remains) and the graphics are dithered, there's no sense here of trims or cutbacks, and a strong one that anything you might like to do, you can. Without getting down into the nitty-gritty, you'll especially enjoy the ability to plan missions in detail; the "explore" mode, which permits you to tour any portion of the game area in 3-D; and a superb 332-page manual (yes! an index! thank you!) that's at once literate, simple, and exhaustive.

Continued on p. 70.

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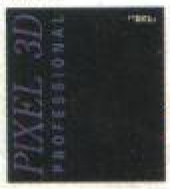

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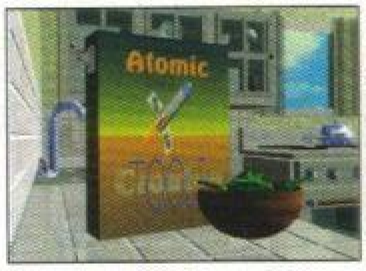
CROUTON TOOLS 4000



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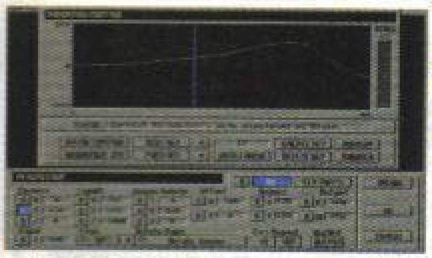

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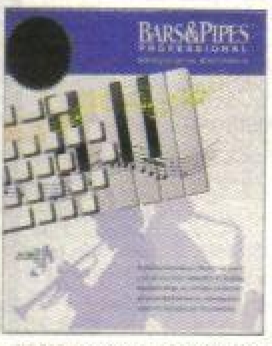

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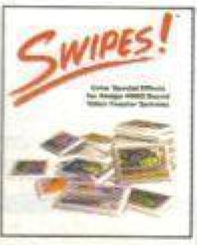

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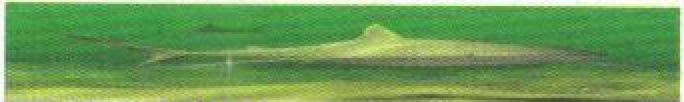

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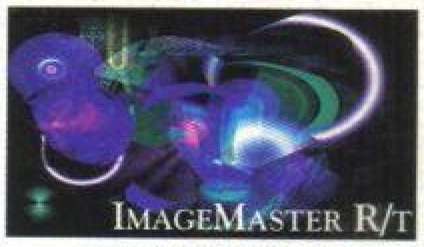

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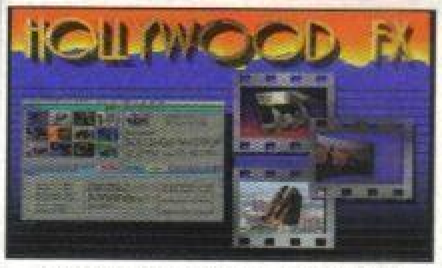

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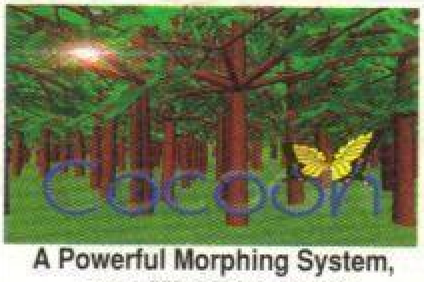

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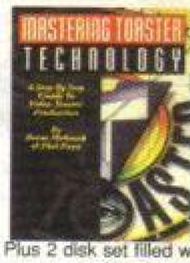

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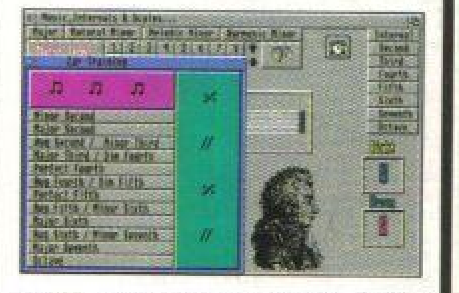

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BEST SELLER!

WB141ABCD: Amiga Verse Search The Authorized 1611 King James Bible...online! Complete cross-referencing to all words is included. Runs on all Amigas with 1MB of RAM and 2 drives. Requires WB1.3+.

NEWEST DISKS

WB144: Molecule CPK renders space filling representations of atoms and molecules. Req's WB3.0+ & Hard drive.

WB143: ViewTek THE definitive display utility. Versions included for Amiga, DCTV, EGS, FC24, Picasso, Opalvision, Retina, IV24. Also includes new MakeAnim7 utility.

WB142: JCGraph A beautiful graphic package...pie charts, 3D charts of all types...exports EPS, IFF & Draw2000 formats!

WB145: Big Dummies Guide to the Internet An interactive AmigaGuide to the information highway and how to tap it!

WB140: Mr. Backup A powerful hard-drive backup utility with full tape-drive support. Formally commercial! Req. WB2+

WB139: MIDI Performance Manager Utility to manage a MIDI synthesizer and other MIDI equipment. Requires WB 2+.

WB138: 3.0 Extras #2 - Another disk chocked full of utilities to unleash the power of Workbench 3.0 and AGA!!

WB137: The ARexx Guide - Full AmigaGuide (inc.) document to teach you ARexx!!! Tip-filled with easy x-referencing!

WB135: 3.0 Extras #1 - 13+ utilities for WB 3.0. Several must-haves for getting the most out of your new graphics modes!

FD96: Tetris Duel AGA - The next generation Tetris..2 players can play head to head and sabotage each other! Great graphics for AGA machines! Req's A1200 or A4000.

FD95: Deluxe Galaga - You should be paying $40 bucks for this one! Easily one of the best p/d games ever! All kinds of power-ups and silky smooth motion. Req's 1MB Chip RAM (Fat Agnus) for PAL Mode.

FD94: Scorched Tanks - completely updated and compatible with AGA/3.0! 60 different ways to blow each other away! An outstanding game of angles, trajectories & unique arsenals!

FD93: MegaBall AGA - This is the one you've been waiting for! Updated to knock your socks off! THE best p/d game for the Amiga. Req.'s WB2+ & 1MB RAM. Show off that AGA!

FD92: Blast'em - contains Scorched Tanks--a tank battle with futuristic weapons/defenses & "great" graphics. Galactoid is a Galaxian/Space Invaders game completely Amiga-tized.

FD91: Popeye - A clone of the original C-64 classic--Amiga style with enhanced graphics. Req 1MB chip RAM for PAL.

FD90: Conquest & Dominion - Conquer the known world and maintain dominion over it--a microcosm of economic survival.

FD89: Kastle Kumquat - A thoroughly entertaining and challenging maze/adventure game. Great soundtrack and graphics. Req's 1MB Chip RAM (for PAL mode).

FD88: AmyBoulderdash - a clone of the original classic, extremely well done complete with level editor, 2 complete sets of levels and a level editor. Requires Workbench 2+.

FD87: OXYD- A commercial quality game--similar to Marble Madness in nany ways, but allows two computers to link & play together...see how many of the 200 landscapes you can complete without having to get the hint book!

FD86: UChess: The strongest playing Chess program available for the Amiga period. Req. 68030+, Workbench2+, 4MB RAM or more. Supports AGA (req. 8MB!)

DD93: Magic User Interface Greatly speeds development. Auto Screen/Window/Font sensitive interfaces and *much more!*

DD92: Developer Contains the official Commodore developers kits for the AmigaGuide and Commodore Install Utilities...a must have for all serious developers.

FUN DISKS

FD6: GAMES! - This disk is chock full of games including: Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: Pacman - This disk contains several pacman type games including: PacMan87, MazeMan and Zonix.

FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the 2nd release of this game. Great graphic interface. Play time several weeks!

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features. Also Thirty-One,VideoPoker and more.

FD12AB: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains Monopoly, Dominoes, Paranoids, and others.

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software with Amiga programs!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives. Also, check out our PC-Task emulator on our DevWare Video page!

FD17: Educational Games - This disk includes several games for youngsters including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce; A game that simulates combat between two or more giant robots. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

FD31: Games! - Air Traffic Control - a good ATC simulation, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - An instrument simulator for a DC10.

FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.

FD38: Games - Cribbage Master - A great cribbage game and tutor. Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

WB105AB: Workbench 2+ Extras #2

This set contains the programs that should have been included with WB2+. These powerful utilities take full advantage of the many new capabilities that are available in Workbench 2+. Includes: Tool Manager - a wonderful utility to add programs to your TOOL menu. Virus Protection - Degrader, Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files. Bitmap Font Editor, Screen Blankers - ala fractals and spliners and swarming bees! Requester Enhancers and CPUBlit. Two disk set, counts as two.

FD39A&B: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Excellent!!! Counts as two disks. Requires 512k

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores and addicting gameplay. Gravity Attack is a psychadelic trip through several different worlds---each different.

FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.

FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a *great* Dr. Mario clone. Enigma; is it a game or puzzle?

FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kil or be killed game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.

FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Req. 1 megabyte of memory.

FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!

FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.

FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.

FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!

FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks---incredibly well done! Search is a maze game unlike any other---included is a level editor too. (Tanx requires 1 meg chip memory=Fat Agnus)

FD77: Arcade Series - Galaga'92 is a clone of the arcade game with several gameplay enhancements--with smooooth, sharp graphics, it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered!

THE AMIGAWORLD "BEST-OF" SET

FD85ABCD: AmigaWorld's Best - These four disks contain the *hottest* p/d games! Includes Mother Lode, Moria, Minefield, Poing, Intruder Alert, Deluxe PacMan, Rocky and Super Artillery (see Dec. '92 AmigaWorld). Four disk set, counts as three.

FD81: SuperGames - Some of the best games--Donkey Kong is better than the original *with an extra level!* Frantic Freddie and TrailBlazer are both fast-paced arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!

FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga original.

FD84: Games! Deluxe PacMan is better than the original--20+ mazes, special "power-ups" with *oustanding* graphics. ThinkAmania is the classic game of concentration--with *beautifully* drawn HiRes images.

WORKBENCH DISKS

WB4:Telecommunication - This disk contains several excellent pd communication programs: Access 1.42, Comm 1.34 & Handshake 2.12a. See also WB102 & WB115.

WB5: Fonts #1- 35 bitmap fonts. Also included are five PageStream fonts,and ShowFont - a font display program.

WB6: Fonts #2 - ShowFont allows you to quickly and painlessly view all 256 characters in a typical font. Includes large AmigaDos system fonts (many up to 56pts).

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13AB: Printer Drivers and Generator - over 70 different drivers (including HP LaserJet 3 & 4!), also includes a printer-driver generator. Two disk set counts as two.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot, a 3-D mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map IFF image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere.

WB25:Educational - On this disk are two programs that can generate maps of differing types. World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB35: 3D Graphics - This disk contains 3Fonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, World3d - a demo of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!

WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Version 3.20--compatible with WB2+.

WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Req. 1.2 MB

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QT3: THE A64 PACKAGE *VERSION 3* - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0 and now 3.0! This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. All-new transfer software! Special price $59.95 -with hardware.

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ....), people, & transportation.

WB47: Clip Art - Hires clip art. Motifs - hair, drafting, summer, animals and macfood.

WB48: Clip Art - Hires clip art. Motifs - Holidays, music, medical, and misc.

WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and more.

WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Houser M.D", Cal - a calendar program, Magman - a database tailored for articles and publications.

WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenomorph.

WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.

WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, and forced disk validation of corrupt disks.

WB66: Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.

WB69: Music - 90 minutes of classical and modern electronic music for you Amiga.

WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss)

WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going. LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB119ABCDE: Font Set. This collection contains over 100 typefaces for use with Professional Page/PageSetter 3+ or PageStream 2.1+. These fonts will output to any laser printer or dot-matrix printer with no jaggies, thanks to outline fonts. Very pro-looking. *5 disk set, counts as 4.*

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.

WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.

WB93: Workbench 1.3 Extras #2 Contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.

WB95: Checkbook Accountant 2.1 - Definitely commercial grade; we've seen many checkbook programs and this is the best. Full budgeting, transaction recording & report generation.

WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

WB102: Telecommunications - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it can create a full-featured BBS system.

WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and phone number dialer.

WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renound editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!

WB109: VerseWise - Display, search and print The New Testament.

WB113: Sid II - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now *completely* rewritten, Sid 2 will astound you.

WB114: Fonts #4 - Contains 36 bitmap system fonts.

WB115: Telecommunication - If you have AmigaDOS 2.04+ and a modem, then this is *THE* program for you. Term totally conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were this good.

WB116: Databases - This is what you've been waiting for! Contains 5 uniquely specialized database programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!

WB120: Grinder - a complete graphics conversion package that supports GIF's, JPeg, Neochrome, Degas, PCX, Targa, TIFF, HAM-E and IFF format pictures. An invaluable tool for all desktop-videographers and desktop publishers.

WB118: Amiga Beginner - *You asked for it!* A complete tutorial for the beginner on using the Amiga. Starts you off at the power-switch and takes you through to the CLI/Shell and all points in between. *Bonus!* Also included are 16-color icons to replace *every* icon in your 2.0+ Workbench.

WB121: ProPage3/4 Enhancer - This disk contains over 40 "Genies" for use with ProPage 3+, including useful ones like Make Pie Chart and Resize Text to fit Box to name a few. Also includes structured & bitmap clipart for unique borders...a *must have* for all PPage 3 users.

WB122: System Optimizer - KCommodity enhances your system, gives memory meters, mouse/keyboard enhancements, online timers plus *many* others...too numerous to list! REorg will optimize hard and floppy-disks for a big speed increase. HDMem will allow you to use up to 2 megs of hard-drive space for virtual memory! (Req. 68020+ w/MMU) All programs require 2.0+.

WB123AB: Flags of the World - same as WB124, but for Workbench 1.3. Req. 1MB. 2 disk set, counts as two.

WB124: Flags of the World - Two modes: click and learn or a game to test your knowledge. Great graphics--fantastic learning tool. Has current Russia & Yugoslavia republics. Req. Workbench 2.0+ & 1MB RAM.

WB127: Blankers - Over 20 different screen blankers. Most run on Workbench 1.3+...a few require 2.0+

WB128: ColorFonts - contains 12 color bitmap fonts for use with DPaint or any software that supports ColorFonts.

WB129: Super Virus Killer - From Safe Hex Int'l, who catalogs and kills Amiga Viruses *worldwide*--a complete virus system that knows all Amiga viruses...updated often. Req. WB 2+

WB130: ToolManger 2 - The ultimate tool manager for your Workbench. Add animated icons, sound effects and 'docks' of programs to your WB...very useful! Req. 2.0+ and hard drive.

WB131: Magic Workbench - Make your 2.04+ Workbench sizzle with style with these 8-color dithered icons. Easy auto-installs in minutes. Req.'s WB2.04+ and hard drive.

WB132: Canon Studio Version 2 - Special printer Preferences editor and drivers for BJC 600, 800 & 880, LBP, A1, A2, BJC 800, BJ 5, 10, 20, 200, 230, 300, 130.

WB133: Panasonic Studio - Special printer Preferences editor and driver system for all Panasonic 9 & 24-pin printers.

WB134: 3.0/AGA Blanker - BlitzBlanker for WB3.0+. 14 different blankers to really show off your AGA machine!

DEV DISKS

DD54: Compression - The best file compression programs and aids for the Amiga. Includes Arc, Lharc, Lhwarp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo.

DD71AB: C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler & environment. 2 disks, counts as 2.

DD79abcd: Amiga "C" Tutorial - This is the most comprehensive C language--*Amiga oriented*--set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples for Amiga programming. 4 disk set, counts as 3.

DD86: The Programmer - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code. Requires, and writes code for, AmigaDOS2+.

DD89: UEdit - Probably *the* most powerful text editor for the Amiga. Previously commercial, now public domain, 1 MB.

DD91: ParBench - Allows you to easily connect/network two Amigas/CDTVs together and share storage devices. Req's custom cable (docs to make cable included--easy).

DD90: Advanced Utilities - CompressDisk doubles the capacity of your hard-drive on the fly with compression!!! Also contains: disk optimizer, SCSI mount utility, Keymap editors, Enforcer, Undeleter & more. Most programs require 2.0+.

VIDEO DISKS

VO9: Imaging - Included on this disk are the indispensible utilities, Rend24, ViewTek and the JPEG utilities. Rend24 is invaluable for 24-bit animators allowing for previews on AGA and non-AGA Amigas. ViewTek plays back anims of all sorts including Anim 5, 7 and 8 formats.

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Circle 42 on Reader Service card.

From p. 64.

So what's the matter? Well, Tornado is rather slow. And I'm not talking about on the standard A500 or A1200. An '030 processor is recommended, but I suspect an '040 would be ideal. It is slow on an A3000 running at 25 MHz, slow on an A500 running at 40 MHz and just a bit slow even on a fast-RAM-heavy, '030-based A1200. Don't get me wrong—it's fast enough to be entirely playable on an '030—but anyone exposed to FDP2's silken ride and solid surfaces is likely to find Tornado's dithered graphics and bumpy screen update wanting, and I just wish they'd finessed the Amiga version a bit more. (A Digital rep says that better speed will be one of the improvements in the forthcoming Amiga 1200 version.)

F117A Stealth Fighter 2.0, on the other hand, represents something of a return to flight-sim form for ***MicroProse UK*** after the ponderous B-17 and drab Dogfight. (By the way, I've since been informed by a reader that B-17's speed problems are accelerator-related, ironically enough, and that it works much better under the utility program Enforcer.) It's a very clean conversion of the IBM original—quick to get in, quick to get out, and good fun while it lasts—operates well even on a basic machine, is NTSC compatible, and offers a nice range of scenery and airborne activity. (The intro's smart-bomb attack on a hangar is a treat as well.)

However, it's also something of a throwback to the days of F-15 Strike Eagle II. That's nice in some ways—like that game, it's very playable—but it's also burdened by a clunky dashboard, somewhat ragged movement and split seams when turning, and a limited palette even in daylight missions. Not bad, MPS, but it's time for an update.

SHORT TAKES

COOL SPOT

B+
1.3 ✓ ✻
2.0 ✓ ✻
3.0 ✓ ✻
Not hard-drive installable.
Copy-protection.

You remember Spot, right? 7 Up's trademark character—a red dot with Ray-Bans, a Mr. Natural walk, and Mickey Mouse gloves? He last lent his name to a Go variation published by Virgin around 1990, and now he's back as the main character of an arcader of which he's more than just host, and much better suited.

I've held forth before on artless merchandising in Amiga games before, but I'll shut up about it here, as this entry (*Virgin UK*, about $35) is really rather good. Its greatest asset: It doesn't do anything twice, it does enthusiastically everything it elects to do (the animations are consistently charming), and it choses its source material wisely. (The opening beach level appears to take off from LucasArts' Star Wars games for the Super NES.) I never knew quite what was coming next, and I was never disappointed. Could this be the Un-Arcader?

Caveat: You may have to experiment a good deal with Degrader or its equivalent to get Cool Spot to fizz to life. The load is long, but it does work.

• •

NO SECOND PRIZE

A
1.3 ✓ ✻
2.0 ✓ ✻
3.0 ✓ ✻
Not hard-drive installable.
Copy-protection.

Were Fighter Duel to descend to earth and, in the fashion of Japanese robots, morph into a motorcycle game, it would surely turn into No Second Prize (*Thalion USA*, $29.95)—a racing sim that fairly flies down the track on even the most basic Amigas.

I saw that skeptical look. And you're within your rights. Polygons and motorcycles haven't mixed particularly well to date—Team Suzuki and Red Zone crashed better than they rode—but this is something else entirely. You tear down the track without a trace of frames going by—the flow here is absolutely liquid—and this with not a little in the way of track-side scenery. The mouse control is entirely intuitive, off-road is properly bumpy, the intro is lovely, and the whole thing just breathes class.

OK, the game doesn't have great depth of field (cycles disappear in the distance too early) and the little hills look as though they've been superimposed on the track. Perhaps this is all just a stylish programming trick rather than a full 3-D world. But if so, it works like a charm. On the turns, you will be leaning in your chair.

ZOOL 2

A
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

We are in the presence of greatness. All the superlatives wasted on the disappointing Zool apply most vigorously to Zool 2 (*Gremlin Graphics*, about $35), which I'd rate as the best pure platform game of 1993.

Here, at last, the little ninja comes into his own. The artwork is arcade-gorgeous; the levels vast, elaborate, and varied in architecture; and there's a cumulative bigness of spirit here—a suggestion of distant horizons—that keeps calling you back into the fray. Zool was a trifle. Somehow, Zool 2 feels as though it matters, and that's unheard of in a platform game.

Alas, it seems to balk at loading on any machine with a hard disk or '030 (or both; I couldn't tell), and the action does slow down somewhat when there's a lot of stuff moving on the screen (as there often is). That'll all probably get fixed in the inevitable A1200 version, but there's really not much more they could add. As it is, Zool 2 is damn near perfect.

• •

KGB

A–
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
Off-disk copy-protection.

Welcome, comrade. *Virgin* has taken its own sweet time about it, but the US division has finally brought out a domestic edition of this taut and absorbing graphics adventure. Set in a distintegrating Soviet Union, KGB casts you as a newly transferred intelligence agent prowling Moscow's seamy underbelly. If now somewhat dated—Gorbachev was in power when this first surfaced—it's still top-notch.

Really, what's not to like? KGB is nice and tough in a reasonable, non-adventure-gamey way. It doesn't pull punches over subject matter. The first-person view is an original touch. The click-me interface is teflon. And French developer Cryo has shown its customary respect both for the Amiga's abilities and the range of machine configurations.

And, most of all, I admire KGB for always keeping its head; it's a regular bear for consistency. Immersed in its story, characters, and milieu, not once does it fall into traditional adventure-game tricks and traps. Nor does it use a cliché without also letting the steam out of it along the way. And not once does it set us up for a payoff it can't deliver. You'll rarely be disappointed here . . . and you'll never see red. ►

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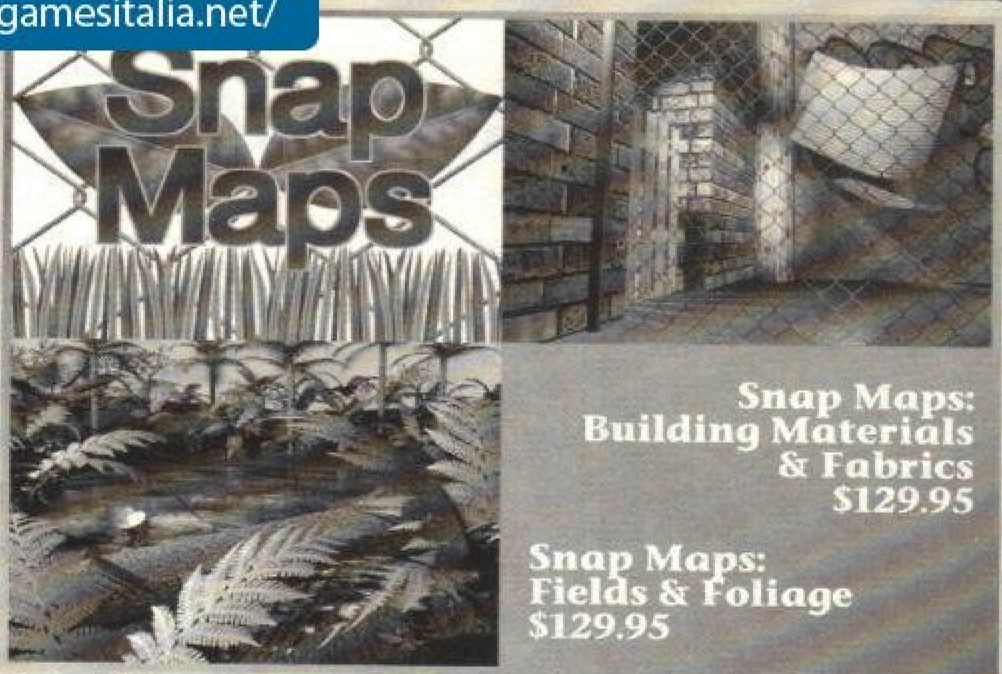

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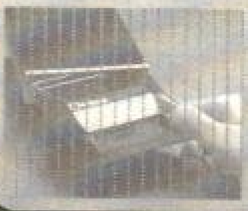

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T2: THE ARCADE GAME

C+
1.3 ✓
2.0 -
3.0 -
Not hard-drive installable.
Copy-protection.

The trouble with Operation Wolf-type shoot-'em-ups—essentially, sideways-scrolling target ranges—is that once you get over the rush of juice from their close resemblance to the arcade originals, you have pretty much seen everything that this game has to offer.

So it is in T2 (*Virgin UK*, $35)—the second Amiga game to be born of the second Terminator movie. This conversion of the standup looks and plays very like the original frenetic shooting gallery, and, like the cabinet model, it is wanting as a game. You'll enjoy it for the first 15 minutes or so, with metallic, grinning Terminators distintegrating before your very eyes and wasting lots of recyclable scrap metal. Then you will notice that the second 15 minutes is a whole lot like the previous 15, except that it requires more bullets, weapons, greater speed, and better aim. Aren't you excited? (That said, T2's still much better than the movie's other, more timely hellspawn: the Ocean platform game.) ■

CD32: COOL CAPTURES

The two games in the original European CD32 bundle have been released separately by their publishers (**Diggers** from ***Millennium*** and **Oscar** from ***Flair***) and both bear up OK in the new context—especially the Lemmings-like mining game Diggers (B-).

And while Oscar's hardly Sonic, this platformer is at least a graphical tour-de-force (C+).

Odd that **Morph**—a nice arcade-puzzler from ***Millennium*** built around changes in elemental states—should itself go through so few changes en route from the original. This has the 12 extra levels from the A1200 version, and I suppose the music's a bit better (B).

Arabian Nights for CD32 (***Buzz***) has barely changed from its original Amiga release, and a good thing, too. The original platform/puzzler was brilliant in its simplicity, and why mess with a good thing (B+)?

The platformer **Trolls** (***Flair***) has most of the qualities you probably liked in its younger brother, Oscar—except maybe a sympathetic character. Play's a bit thin, but gotta love the backdrops, and the jaunty, let's-go-rollerskating music has been punched up significantly (B-).

Nigel Mansell's Championship Racing (***Gremlin Graphics***), released for the CD32 in tandem with Zool, also crawled from the same swamp. Ick (D+).

Sensible Soccer (***Renegade***) is the most highly-rated soccer game ever released on the Amiga. Sensible Software didn't have to do anything much in bringing it over to the CD32, and it hasn't . . . for better or worse (B).

John Barnes European Football (***Buzz***) doesn't even deserve to be mentioned in the same breath as Sensible. I flout this restriction this time because it was the first sports game for the CD32, and that's likely to be the last time this hard-to-control and ugly soccer game will be first at anything (F).

Shame that the big-sprite platformer **Deep Core** (***ICE***)—the disk version of which was semi-panned a couple of issues back—didn't turn up in this format first, as it's much more on target playwise (B).

The tour-de-force graphics adventure The Labyrinth has finally turned up as **The Labyrinth of Time** (***Electronic Arts*** UK, about $45). It works fine on the CD32—and naturally is faster—and all the superlatives (and the few reservations) heaped on it in the preview last September still apply (A-).

Editor's Note: Thanks to British Magazine Distributors for providing some of the games reviewed this issue. □

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BY TIM WALSH

8MB of Chip RAM?

Q. *When my Amiga dealer was installing 4MB of RAM into my Amiga 4000/040, he noticed a jumper on the motherboard labeled 2MB and 8MB chip RAM. Is it possible to upgrade the A4000 to 8MB of chip RAM?*

Roger L. Walker
Santa Ana, California

A. Virtually everyone who's taken apart an A4000 has noticed the same markings on the motherboard. While there was once official talk of making the additional chip RAM active, unfortunately, this never happened, and the potential for adding the additional chip RAM was forgotten, resulting in little more than a conversation piece.

Why Y/C?

Q. *Why is it so costly to convert a composite video signal to a Y/C signal? What exactly is a Y/C signal? Are there any reference materials that deal with this subject?*

Thomas West
Orlando, Florida

A. Component Y/C video is a video standard found in professional- or industrial-quality components. By keeping the chroma and luma signals separated, the quality of the video can weather a generation or three of additional editing that would turn composite video signals to mud. Most newer video components, such as genlocks and time-base correctors, offer Y/C connectors.

Some confusion has arisen in recent times with products such as Y/C Plus (Y/C Plus, Inc.), because they are designed to convert the composite video signal from the Video Toaster into a component Y/C signal. However, component video doesn't exist for the purpose of converting composite video signals. Rather, component Y/C is best utilized if the signal channels originate as Y/C at the source and remain that way to their final destinations.

Sources for this type of information include *AmigaWorld's* "Video Suite" columns found in back issues, and Paulo de Andrade's current "Video In Focus" column. My favorite source for video developments, applications, and hardware is a trade publication, *TV Technology* (PO Box 1214, Falls Church, VA 22041), which covers new trends and products. Best of all, this oversized publication is free to qualified subscribers.

IDE Drive #2

Q. *I have an Amiga 4000 and I'd like to add another IDE hard drive to the system. The wide ribbon cable that connects the controller to the existing drive appears to have a second connector. I think that would make adding a second IDE hard drive to the system as easy as simply plugging it in, yes?*

Norman R. Whitney
Tioga, Pennsylvania

A. You are correct, sir—you can indeed plug a second IDE drive into the existing hard-drive controller cable, provided you can find the space. As part of the introductory Toaster 4000 dealer kit, I added a second internal, large-capacity IDE hard drive to my A4000 by daisychaining it to the existing IDE controller cable. Be prepared, however, to temporarily remove the power supply and the existing IDE drive in order to properly mount the second hard drive. There's no other way to access the mounting hardware.

If you have a second internal floppy or CD-ROM, you'll have to jettison it, or go with an external, as opposed to internal, IDE hard drive.

Copying MS-DOS Disks

Q. *How do I create a 720K MS-DOS disk using Workbench 2.04? I've tried dropping a disk image of an unformatted disk over the image of the PC-formatted disk on the Workbench, only to get an error message stating disks of different sizes cannot be copied.*

Tom Roberts
Dixmont, Maine

A. As you probably well know, a PC-Amiga disk utility needs to be in place and running in order to copy PC-formatted disks on the Amiga. AmigaDOS 2.1 and later include CrossDOS, just such a utility. MultiDOS, another PC-Amiga disk utility, is available through online sources and PD disk collections.

Regardless of whether you're using CrossDOS, MultiDOS, or any similar PC utility, the Amiga's operating system won't allow you to copy or create PC-formatted disks by dragging an unformatted disk's icon over that of a PC-formatted disk—nor will it let you do it by using the Diskcopy command. Since the Amiga's OS recognizes a standard double-density PC-formatted disk as 720K in size, and an unformatted Amiga disk as 880K, it simply generates an error message and no copying occurs.

You can, however, create PC disks to your heart's content with roughly similar commands from the command line. Just open a Shell and enter

```
FORMAT <drive> NAME <diskname>
```

If you're using CrossDOS with a disk in df0:, enter PC0: in place of the <drive> nomenclature; for MultiDOS, substitute the drive name MD0:. With a PC-formatted disk in each of your Amiga's drives, you can then perform the disk copying procedure either by using the Workbench as previously described, or by entering the following in a Shell:

```
DISKCOPY <drive> TO <drive>
```

■

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AW Shucks!

In "The Compression Game," (Jun. '94, p. 26) the opening illustration was created by artist Phil Thorn and not by Steve Thorn. We apologize for the error.

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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Editor's Note: Because "Last Word" was going to press before readers had a chance to respond to the events at Commodore by traditional post, we're including some online responses to a press release we posted about the events on the networks. For more information about the Commodore situation, and reactions to it, see pp. 2 and 4.

LONG LIVE THE AMIGA!

Thanks for posting that notice. It's good to see that *AmigaWorld* will be with us, even after Commodore's demise.

Steve Pietrowicz
CompuServe: 76701,250

Good . . . hate to have my subscription change to some pc/mac mag!!

Thomas Harmon
CompuServe: 72740,2261

Concerning the licensing [of Amiga technology to third parties], I'd die happy if multiple, nonexclusive licenses to all the technology were granted to pursue the technology of Amiga computers and maybe the CD32, with, say a set-top box exclusion . . . If the licenses could be granted, the Amiga—or at least AmigaDOS—may well live on into the future as an important product.

Joanne Dow
jdow@bix.com

You should encourage companies to continue to develop for the Amiga and to continue to advertise in *AmigaWorld*. The temptation will be for anyone who continues to produce software and hardware for the Amiga to say, "Hey, I've got a captive market now. I don't need to advertise."But if there isn't a support forum for the machine like *AmigaWorld* then the market will die sooner!

Advertisers need to think of it not so much as "building a market," which is what advertising was to them in the past: They need to think of it as "donating blood" so that the Amiga market will survive longer.

Mark Brown
mbrown@icaen.viowa.edu

PATS ON THE BACK

I have read your magazine for years, since the Amiga first came out and have thoroughly enjoyed every issue. I always wait anxiously every month for my next issue to arrive. I applaud your fine magazine. If it wasn't for your continued support for the Amiga and its community, it might have had a premature demise years ago.

Rob Watson
Gibsonville, North Carolina

> *It's good to see that* ***AmigaWorld*** *will be with us, even after Commodore's demise.*

Two thumbs up for Dave Haynie's article, "The Best Things in Life Are C," in the May '94 issue. I look forward to the continuation of this series and applaud its inclusion in your fine magazine.

Todd Wiggins
Bakersfield, California

EGS FOR EVERYONE

I enjoyed your review of the GVP EGS 28/24 Spectrum in the April '94 issue. Although you pointed out many of the board's positive features, you also repeated an ongoing misconception regarding the Spectrum and EGS.

One of the strongest arguments against EGS boards such as the Spectrum, in a comparison with boards like the Picasso II, regards the lack in ability to promote Workbench software to the board's high display rates. Fortunately for Spectrum users such as myself, this is not the case.

The Spectrum does not require that you use EGS specific software in order to utilize the graphic board's special resolutions. Once the Spectrum is installed, all of its resolutions are added to the Workbench display database. You can edit and create new resolution modes with the EGS software. Any software that allows you to choose resolutions from the display database can use EGS screen modes.

It doesn't stop there however, you can also use some of the PD promotion utilities to promote software to EGS screen modes. I can run Imagine 2.0 on a 1600x1280 screen! I'm not sure if promotion works as easily on all systems, but it works perfectly on my A4000 under 3.0.

Vadim Levitin
Lenexa, Kansas

DOS AND DON'TS

In "Hidden AmigaDOS Gems," in the May issue, the section on CMD [has] the operand parallel in all caps. For some inexplicable reason, this one AmigaDOS routine is case-sensitive, and any form except "parallel" does not work in any machine I have tried it on, either 1.3 or 2.1.

Another oddment about CMD: In my experience, use of this function runs a significant risk of a guru. This problem arises, I suspect, when some application program thinks it has first "dibs" on the parallel port or on the printer, and you try to butt in with a CMD redirection.

Geoffrey A. Gass
Portland, Oregon

Editor's Note: Thanks for the correction, Geoffrey. We apologize for any inconvenience our error may have caused. ■

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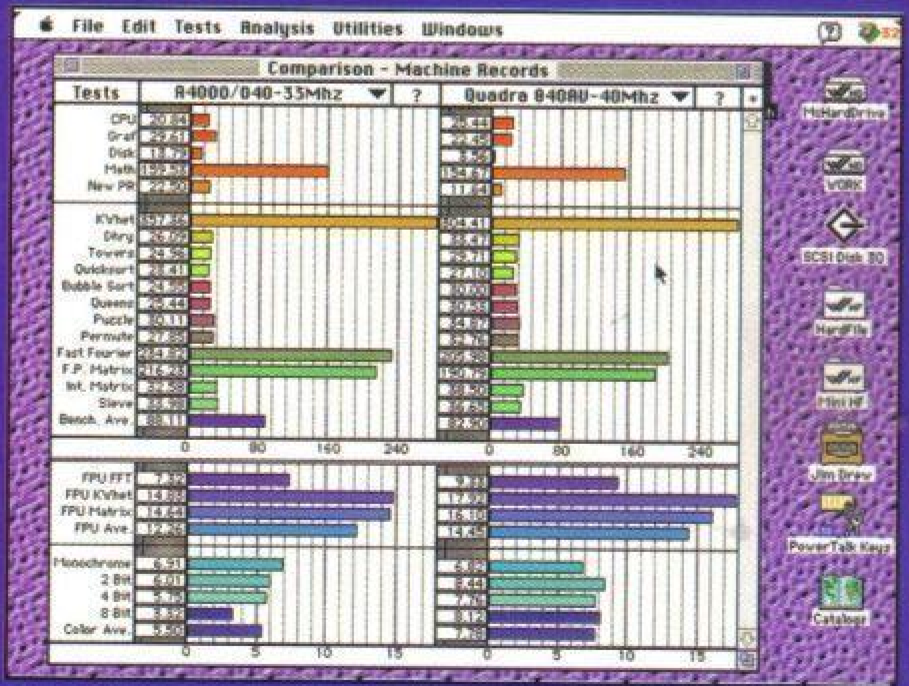
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"Speedometer v3.23" speed comparison (68040 CPUs) 33Mhz A4000 vs. 40Mhz 840AV - Hey! That's not fair!

EMPLANT is a hardware device that is designed to allow the emulation of virtually any computer using the Amiga. A simple software driver and ROM(s) from the computer to emulated are all that is required! The hardware holds the key to emulation speed. Custom programmable logic allows the EMPLANT hardware to actually become the exact hardware of the computer it is emulating. Multiple emulations of different computers can be ran at the same time using a single EMPLANT board!

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The Macintosh emulation module is a 'generic' Macintosh with the speed of the emulation depending on the processor your Amiga is using. An A3000 is equivalent to a MAC IIci. An A4000 is equivalent to a Quadra 900. Using a 33Mhz 68040 accelerator (such as the RCS Excaliber board), emulation speed can be greater than an 840AV Macintosh! (See speed comparison above)

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Like ALL of the emulation modules that will be released for use with the EMPLANT hardware, the Macintosh emulation module **MULTITASKS** with the Amiga's operating system! You can simply pull down or flip screens and get back to the Amiga side! ...and the emulation stays running at full speed!

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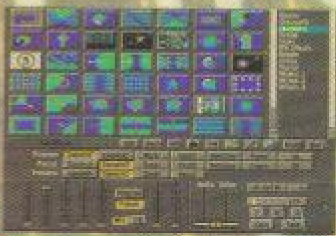

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